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PIONEER INTO SPACE: A BIOGRAPHY OF

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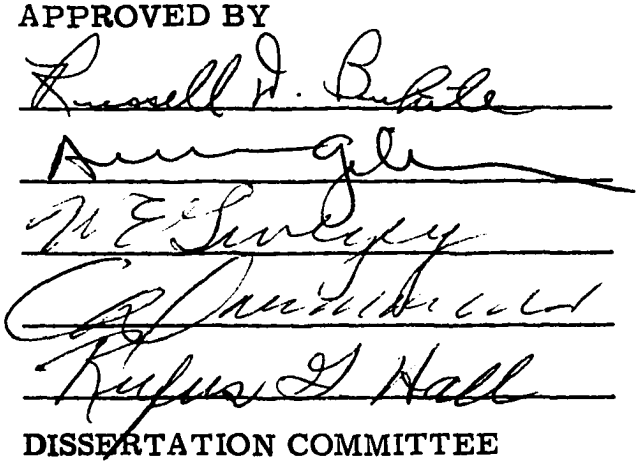

DISSERTATION COMMITTEE

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Maxwell AFB, Alabama
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CHAPTER I

EARLY LIFE

One of the most attractive and thrilling military duties to which a young man could aspire in World War I was that of flying. Yet, the state of airplane development in 1914, when war broke out in Europe, gave cause for even the most courageous individual to have second thoughts. Flimsy pieces of framework covered by shellacked cloth and propelled by unreliable engines of inadequate horsepower, the early war planes were not considered by those in command of the ground armies as a suitable weapon of combat. Until the accelerated technology of war developed the airplane into a platform for a machine gun, it would not be incorrect to say that flying had none of the romantic aspects usually associated with the inception of aerial "dogfighting." By 1917, however, the Spads, Nieuports and De Havilands had progressed to a point wherein aerial combat was recognized as a segment of the overall war, if not, at the time, a very important one.

It did not take the newspapers long to tell the world about this new form of fighting, or to adopt these daring young men as heroic manifestations of an otherwise sordid, bloody, and seemingly interminable war. Instead of water-filled, rat-infested trenches, the environment of the flying man was clean and almost antiseptic. To be sure, the dead were just as dead and in some cases died quite violently, but the new means of killing captured the imaginations of the press, and then the public, of the world.

The fact that the new, third dimension of combat was untried and varied with each new plane developed, or maneuver that was attempted, left the pilots themselves in a position of trying to determine their own tactics while, at one and the same time, attempting to persuade ground-oriented officers to accept the new dimension as worthy of attention and use. Scorned even in their original roles of observation and artillery spotting, the pilots on each side progressed from friendly waves to firing at each other with pistols, then shotguns, and later to hand-dropping small bombs. With the first aerial machine gun came deadly combat and technological refinements in both planes and guns allowing a rapid progression to the more famous "dogfights." Through it all, the pilots and their leaders were groping for the place of the airplane in warfare. Dissatisfied with the meager role assigned them, the aerial leaders envisioned the day when exploitation of the air might directly affect the outcome of the war. World War I ended before

that goal could be realized, but the debate and the search continued--sometimes against tremendous odds. Unfortunately the war had not tested adequately the concept of strategic aerial bombardment. Only aerial fighting and observation had been used, and for many, this was a sufficient role for the unreliable machines.

This rather parochial military thinking restricted the development of the airplane during the years of the war to single-seated fighters and dual-seated observation planes. A few bombers were built, but, with the exception of the German use of Zeppelins to bomb London, strategic aerial bombardment, as we now know it, did not exist in World War I. Even after the war, the emphasis on airplane development centered around the fighter with bomber improvements taking a back seat for several years.

One man, more than any other, was responsible for reversing this trend in the United States. Brigadier General William Mitchell, a strong advocate for a separate air service, also advocated the vast capability of the aerial bomber. He proved it when, in 1921, he and several of his fellow officers bombed and sank a German battleship obtained through reparations payments. Immediate acceptance was not forthcoming, but he pursued his cause with near fanaticism. The result was that the concept of strategic aerial bombardment found its way into the curriculum of the Air Corps Tactical School during the 1930s and increasingly captured the minds of the students and faculty there.

Gradually the idea grew that it might be possible for a heavily-armed, self-sufficient bomber to overfly the front lines of the next war and strike a telling blow with bombs at the industrial heart of the enemy thereby eliminating his capacity to sustain warfare. The more the theory was discussed and experimented with, the more converts it received until by the late 1930s this theory had become dogma.

Airplane manufacturers contributed directly to this evolution. Spurred by the thinking of the officers that were to fly the planes, the aircraft companies began to develop bombers to the partial exclusion of fighters. As a result it was possible to run tests in 1935 in which the latest bombers produced in the United States outflew and outran the latest fighters. The erroneous conclusion was that true airpower was actually bomber power, and with this idea uppermost in the minds of the pilots of the day, the United States prepared for World War II.

The new war was not long in showing the bomber advocates the partial error of their ways. No bomber was self-sufficient, at least not for very long. Britain, Germany, and, to some extent, France had concentrated on the development of fighter aircraft as well as bombers. In the case of Britain such action saved their nation. Answers to such strategic and tactical problems as the need for all bombers or all fighters or a mixture are never completely given. The questions were at least partially resolved in the crucible of the second world war. What emerged was an amalgamation of both fighters and bombers that

stood the test of combat--an aerial combat on a scale that may never be repeated again.

Very few weapons of so great an impact have gone from inception through development to a combat test in such a short span of time. Of the modern inventory of weapons, only the tank rivals the airplane in its genesis. Indicative of the rapid development of the airplane is the fact that many of the officers and men who flew the flimsy planes of World War I were the leaders of the American aerial armada in World War II. To them fell the task of educating their nation in the utility of the third dimension and of determining the role that airpower would play in future wars. For those few who stayed with the Army Air Service after the 1918 Armistice, a unique challenge and opportunity was presented. Whatever their reason for staying, they went on to play a key role in aerial development, both civilian and military, in this country. Names like Lindbergh, Doolittle and Rickenbacker made civilian aviation news while the likes of H. H. Arnold, C. A. Spaatz, and B. D. Foulois, as well as Billy Mitchell and a host of others stand out during the interwar period as leaders in military air development. Orvil Arson Anderson was one of these men.

The small town of Springville, Utah, was home to the Anderson family, and it was here on 2 May 1895, that Orvil Orson Anderson was

born, the seventh child in a family of four boys and five girls.[1] His father, James Anderson, was Danish by birth having immigrated to the United States in 1872. He settled in Utah where he met and married Jensene Hansen. Mr. Anderson died in 1906, a respected member of the Mormon community in which he lived. While not impoverished, his wife had to work hard to keep the small ranch operating and raise her children in the best Mormon tradition she could muster.

Orvil Anderson's recollections of his early life were of the pleasant but frugal days spent on the ranch and at school. He was given what he later called his "full but fair share" of the chores that were a constant requirement on such a ranch. From this experience he learned an early dependability and self-reliance that was of incalculable benefit to him, not only as a fatherless young man growing up, but in later life as well. An average student in school, young Anderson excelled in mathematics and in football and basketball. He had planned on playing football in college, but Brigham Young University, which he attended from 1914 to 1916, did not engage in inter-collegiate football at the

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[1] Anderson's given middle name was ORSON, after Orson Pratt, a high official of the Mormon Church. When he entered the service a clerical error resulted in the spelling of ARSON. As he later told the story, "It was that way on the pay voucher and I needed the money that night and because I didn't want to wait for the red tape of a new voucher, I signed. Somehow, I never changed it." The name ARSON stuck and was his official middle name on all subsequent service records. File, "Correspondence Pertaining to Speaking Engagements, June-December 1948," Archives 168.7006.8; also interview with Mrs. O. A. Anderson, 20 March 1969.

time. His average height and only slightly above-average ability kept him from making the varsity basketball team at the University.

Scholastically, the records of high school were repeated at Brigham Young. He won no academic honors, but he did enjoy his courses in mathematics. His primary avocation was playing pool, and it was for this that he was summoned to the office of the President of the University. The President was a disciplinarian, quite capable of imparting his thoughts and feelings to his non-studious, wayward students. On this occasion he spoke harshly, but kindly, to the errant pool-player, driving home his theme of more study and less wasted time. "Orvil," he concluded, "I know your mother and I knew your father, and I know there has to be a great deal of good in you--now why don't you let some of it come out?"[2]

Shortly after this incident, the Anderson family finances had deteriorated to such an extent that Orvil had to leave the University. There is no record as to the amount of regret expressed on either side at this action. Some of the copper mines of Montana were owned by the Mormon Church and it was to one of these mines that Orvil went for his first full-time work. In nearby Butte, Montana in 1916, Anderson witnessed his first flying exhibition. He always remembered how impressed he was to see a man fly for the first time. "It looked like romance and glamour," he said later, "and it was intriguing." That

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[2] Interview, Mrs. Anderson, March 1969.

single flight exhibition had a profound influence upon Anderson's career for as he said many times thereafter, "There was no question about it, I entered the service just because I wanted to fly an airplane."[3]

The Aviation section of the Signal Corps of 1916-1917 concerned itself as much with balloons as it did airplanes. As a platform for observation, the chief role of the air so far as the United States Army was officially concerned, the airplane was distrusted because it had to move to stay aloft. This was deemed a great disadvantage over the relatively more stable balloon which was anchored to the ground with a cable. The Signal Corps did possess several Curtis JN-3s, and later some N-8s and R-2s, all of which generally proved themselves useful only to expedite messages from one commander to another during their first trial by combat, the Punitive Expedition of 1916. That campaign of fiascos which saw the end of the traditional horse cavalry which had fought the Indian across the West, also saw the early use of the airplane for reconnaissance. This was considered unreliable at best, and despite the use of planes in aerial combat in Europe, the United States Army did not deem it appropriate to so equip its planes with guns. Since Pancho Villa possessed no airplanes, aerial combat was not considered. Neither were balloons used in this campaign.[4]

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[3] Interview by Kenneth Leish of General Anderson, December 1960, Maxwell AFB, Ala. File, "Flight Interviews," Archives K146.34-3, p. 3. Hereafter cited as Leish, Interviews, Dec. 1960.

[4] Clarence C. Clendenen, Blood on the Border (New York: Macmillan Co., 1969), pp. 315-322.

What little he knew of the difficulties in using airplanes on the border did not dampen young Anderson's enthusiasm for flying. The earlier flying demonstration had awakened a desire that continued to grow. He resisted the temptation to join the British Royal Air Force when Canadian recruiters came through Montana, but he could not turn down the Army Signal Corps corporal who passed through in the late summer of 1917 enlisting flying recruits. Anderson was told that if he enlisted directly for flying cadets his application would simply be added to the long waiting list and he might never get into pilot training. On the other hand, he was told, if he enlisted he could then apply for cadet training and be at flying school within two weeks. This seemed preferable so on 23 August 1917 Anderson enlisted in the Aviation Section of the Army Signal Corps.

After a brief stay for processing at Fort George Wright in Washington, the new recruit was sent to Kelly Field, Texas, for training. Here he submitted his first application for pilot training, which, despite the promises of the recruiter, was never heard from again. His training completed, the Signal Corps, in December 1917, transferred Anderson to Fort Omaha, Nebraska, just outside the city for which it was named. His ability was quickly recognized and he was offered an immediate promotion to Sergeant Major of a balloon company then forming for duty in France. While this was very much to his liking, he refused the offer in favor of entering the school of balloon observers,

graduation from which would entitle him to a pair of wings and a commission. The next class began in January 1918 and Anderson was in it. He successfully completed the course the following March and was graduated, but, because of a surplus of balloon observers, he was not commissioned. At a loss as to what to do with the new, and uncommissioned, graduates, the Army invented another balloon course, slightly advanced from the previous one and Anderson found himself repeating much of what he had just learned. By this time he had completed the required seven solo balloon flights. Even this did not solve the problem for the Army. Still with an excess of balloon observers on hand, the Air Service, as it was newly designated in May of 1918, sent the young graduates to Ohio State University for a short course in Army administration from which he graduated on 3 August 1918 as an adjutant. As of the same date Anderson finally was commissioned a balloon observer. His first commissioned duty assignment was to return to Fort Omaha and rewrite the balloon observers' course--the one he had previously completed twice. This was his duty when the Armistice was declared in November 1918.[5]

The time Anderson spent in Fort Omaha was not all work and school. The city opened its homes to the students on the weekends, and it was at one of these homes on a Sunday evening in September 1918 that he joined a group of his fellow students for a party. Several young

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[5] Leish, Interviews, Dec. 1960, p. 6.

ladies had gathered for the occasion, one of whom was Lauretta Maude Miller. Once he was introduced, Anderson proceeded to monopolize Maude's evening. A lasting friendship began, but the time available for courting was scarce.

With the war over, and his application for flying still unacted upon, Anderson was disillusioned with the service and like most of his contemporaries, he decided to leave the military. For him the study of law, a long-standing ambition, held a greater attraction. With his law degree, he reasoned, it would be possible to marry Maude and settle down to a profession. Accordingly he made plans to enter the University of Washington and submitted his resignation from the service. His paper work was approved in December 1918 and Anderson went before his commanding officer for a mustering-out interview. The large number of postwar discharges had created many vacancies and the squadron commander, well aware of Anderson's demonstrated talents with balloons, offered him command of a balloon company that was to train for transition into dirigibles. The United States had no dirigible pilots, and for that matter, no dirigibles, but the Army was to receive several from Germany as part of the reparations payments. The thought of being able to fly one of the huge craft was more than Orvil could turn down. He tore up his request for discharge and was promptly placed in command of the 61st Airship Squadron at Fort Omaha, the first such squadron in the United States. In February of 1919 the

squadron received orders transferring it to Langley Field, Virginia. Since not much equipment had to be packed, very little time was given to prepare the company for the move east.

Organizing the company for a move was not the problem for Anderson. More important was convincing his fiancee to make hasty wedding plans so that she could follow him to Virginia. Looking back on it, Mrs. Anderson remembers a few weeks of frantic planning and activity, packing for the trip to Langley Field and a wedding on 1 May 1919. Their honeymoon was a weekend trip to Washington, D. C. after which Anderson reported for duty.[6]

The hasty move to Langley was another case of a well-known military "hurry-up-and-wait." The squadron arrived, other recruits were added and all were settled into a training regime, but no dirigibles were in place nor was there anyone familiar enough with the airships to provide instruction. "It left me and my squadron without much of anything to do except to train for the maneuvering of a mechanical dirigible," Anderson recalled in an interview later.[7] The Lieutenant improvised what training he could by using the largest Army observation balloons available, but this was an unsatisfactory approach to the actual handling

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[6] Interview, Mrs. Anderson, March 1969.

[7] Interview by Dr. Bruce Hopper, 8th Air Force historian, with Brig. Gen. O. A. Anderson in London, England, 24-25 September 1943. File, "Interviews with General Anderson," Archives 168.7006-33, p. 3. Hereafter cited as Hopper, Interview, Sept. 1943.

of the huge rigid airships. None of the men, and this included Anderson, had seen an airship. There were pictures of the Zeppelins that had bombed London, and the knowledge that, while they made no direct contribution to the German war effort, they had destroyed many buildings and killed or wounded some 1684 people in Britain. To an island people secure from invasion for over 300 years, the impact of these raids was nearly as great for their day as was the Battle of Britain in 1940. The use of the huge airships in this manner also marked the beginning of what may be called, in a rudimentary form, strategic bombing.

The importance of this had not been lost upon the air leaders of the day. Brigadier General William Mitchell, Brigadier General Benjamin D. Foulois and others foresaw the day that not only the dirigible but the airplane could fly over enemy lines and destroy his industrial ability to make war. Better planes had to be built, but airships were more easily procured. As part of the reparations due the United States from Germany, the Weimar Republic was to transfer an unspecified number of airships to this country. It was for these ships, and the possibility that a few would be bought from England and France, that Lieutenant Anderson's company was being trained at Langley. In March 1919 word was received that the first of the foreign airships, a nonrigid model similar to a blimp of later years, was due. On the appointed day all 130 men of Anderson's company were on hand to await the trucks. Hour after discouraging hour the company waited, only to end the day

with no airship. Immediate tracing action revealed that Brigadier General Mitchell had indeed placed the order for the airships; they had indeed been crated and shipped under a high priority of cargo; the crates had arrived at the port in New York and there they had languished. Priorities had been ignored in the flood of material returning from Europe so that when the crates were finally located they were on the bottom of huge piles of combat material. When ultimately rescued and opened, the rubberized bags had rotted beyond repair. Shortly after this, in July 1919, Lieutenant Anderson received orders to deactivate his airship company and the first such official organization passed into oblivion.[8]

The deactivation of his command did not put Anderson out of business at all. Like any junior officer he received many additional duties, Adjutant of Langley Field and Post Exchange officer among them. They were not unhappy days, however, for he and three of his fellow officers interested in flying airplanes were granted permission to assemble a plane at Langley. The type of plane is unknown, but Anderson remembered later that he got in close to forty flying hours before

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[8] Lt. Anderson's 61st Airship Squadron enjoys the distinction of being the first such official organization. During the Civil War, Professor T. S. C. Lowe had, at times, many men under him and a semi-official status, but never an official organization. The subsequent use of balloons was always on a detachment basis. See F. Stansbury Haydon, Aeronautics in the Union and Confederate Armies, Vol. I (Baltimore: Johns Hopkins Press, 1941) for a more complete history of Lowe's activities. See also Leish, Interviews, Dec. 1960, p. 10.

his unit was deactivated. He enjoyed lighter-than-air flying, but his first love was still, as it had always been, flying airplanes.[9]

Shortly after the deactivation, Lieutenant Anderson was placed on temporary duty to Pensacola, Florida, with the Navy for a short course in aerial navigation. This too, proved much to his liking. Anderson was the sort of person who had the willpower to pick up a text book on mathematics and study it on his own until he had mastered the fundamentals and any of the details he felt he needed. As such, navigation was a subject which he liked and in which he promptly began to excel. One of the many officers Anderson met at Langley was Second Lieutenant Laurence S. Kuter (now General, USAF (Ret)). The two Lieutenants became good friends and remained so over the years as each rose in rank to high command positions. Looking back on those days, General Kuter said of Anderson:

> At that time I think it is safe to say that he was the leading scientist and technical expert in the Air Corps at Langley. He specifically introduced meteorology as a science of importance to aviation and was generally responsible for making air navigation an effective requirement in what was then considered long range bombardment.[10]

The Navy course in Florida lasted for about two months after which Anderson returned to Langley Field. To his surprise and great delight, two nonrigid airships awaited his return. The Congress of the United

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[9] Hopper, Interview, Sept. 1943, p. 3.

[10] Letter, General Laurence S. Kuter, USAF(Ret.) to author, 6 October 1969.

States, also interested in lighter-than-air due to the experience in Europe, had authorized the Army and Navy to purchase up to thirty airships during the war. The war had ended before the purchases were delivered. Both the A models made for the Army and the C models bought by the Navy were manufactured by Goodyear Tire and Rubber Corporation. At Langley that summer of 1919 was the A-4 and the C-2 which had been transferred from the Navy along with a Chief Petty officer who was assigned to assist in the training of the Army pilots. Anderson took over duties as instructor of navigation and aerodynamics for the airship school while other Army officers, assembled for the same purpose, took over the instruction of areas in which they were specialists. For that part of the hastily organized curriculum which an officer did not teach he automatically became a student in this first airship class. The Navy instructor flew with Anderson for two hours, after which Anderson felt he knew as much as his teacher. He promptly proceeded to prove it by soloing on the third hour, thereby becoming the Army's first qualified airship instructor. While other pilots would exceed his lighter-than-air exploits, Lieutenant Anderson had the satisfaction of being the Army's first airship pilot.

The Army's initial airship school ended in August 1920, and the students/faculty automatically became the staff of the school for succeeding classes. On 20 July Anderson had been commissioned a second lieutenant in the Air Service of the Regular Army and on the

same date promoted to first lieutenant. The military had become his career for as long as he wished it. It was to be a lengthy and fruitful association for both Lieutenant Anderson and his country.

Three classes followed in quick succession at Langley before the airship school was transferred to Scott Field, Illinois, where most of the Army's lighter-than-air ships and equipment were being concentrated. Anderson remained at Langley as a dirigible crewman and to help ferry the aging A-4 to Scott, mapping and photographing landing fields between Washington and Dayton enroute. The small, single-engined blimp had an eighty horsepower motor capable of reaching a top speed of forty miles per hour and cruising at close to thirty miles per hour. Since the charting and photography required that the airship slow down and circle each field, the average speed for the 700-mile trip was closer to twenty miles per hour. From dawn to dark on the first day, Anderson and his crew chief had only covered the distance from Washington to Uniontown, Pennsylvania. There was no place to land so the two airmen had to fly on to Akron, Ohio, reaching there at five the next morning. While in Akron, Anderson took advantage of the Goodyear facilities to rig the ship for anchoring in the ocean, an invention he was working on to increase the versatility of the airship when it faced storms over the open sea. This rerigging of the ship took ten days after which the two retraced their steps to Uniontown, resumed their picture-taking to Dayton and arrived there around eight o'clock in

the evening. The ground personnel at Dayton were not ready to receive and anchor the ship, so Anderson and his crewman flew on to Scott Field, arriving there around six the next morning. It had been an uneventful flight all the way, an unusual feat in itself in those days, and a masterpiece of nighttime navigation.[11]

Back at Langley Anderson was assigned navigator duty with the newest dirigible, the Italian built T-34, later christened the Roma. The purchase was partially an effort to keep up with the Navy which was planning to build the USS Shenandoah, and was buying from German reparations, the yet-to-be-completed USS Los Angeles. The Italians had built the ship to fly from Italy to Brazil, but happily sold it to the Air Service in 1920. Underpowered, the ship was crated and shipped to Langley where a crew, including Anderson, was assigned to it. The Air Service planned to use the Roma in a transatlantic flight and replaced the Italian engines with six World War I Liberty power plants. In order to test the new engines, the Roma was ordered aloft on 21 February 1921, but without Anderson who was detailed to a court-martial for that day. He thereby escaped death when, during the flight, the craft's rudder cable broke causing it to dive into a high-tension line. The Roma crashed to the ground in flames, killing thirty-three of the forty-five crewmen.[12]

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[11] Hopper, Interview, Sept. 1943, pp. 4-5.

[12] C. R. Roseberry, The Challenging Skies, 1919-1939 (New York: Doubleday, 1966), pp. 345-47. Also, Hopper, Interview, Sept. 1943, p. 5.

In almost open competition with the Navy for the aerial dollar, the Army Air Service had planned to use the Roma for a transatlantic flight to equal the 1919 exploit of the British R-34 rigid dirigible. Prior to this feat, there were plans to fly the Roma around the nation exhibiting the airship and advertising both flying and the Air Service. The world's supply of helium, possessed at that time by the United States, was used to inflate the Roma during testing at Scott, but it was decided to save the precious gas for the longer over-the-water flight and hydrogen was substituted during the engine refit and at the time of the fatal crash. The resulting bad publicity caused the Army to search for some other means of gaining the public fancy and the Congressional appropriations. In the fall of 1922, Anderson was designated to fly the reliable C-2 training ship from Langley Field, across country to Ross Field, Arcadia, California, just outside Los Angeles. The ship was to carry a crew of four officers and two enlisted men. The continent had been spanned before by airplane, but never by a lighter-than-air craft. It would be a significant "first" for the Army Air Service and they desperately needed just such a boost in their aerial fortunes. Many years later Anderson admitted that "we had to put our names and the ship on the front page, it had to get more publicity."[13]

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[13] Leish, Interview, Dec. 1960, p. 11. The crew consisted of Major H. A. Strauss, Captain George A. McEntire, Lieutenants Don L. Hutchins, O. A. Anderson, Master Sergeant William E. Fitch and Staff Sergeant A. D. Albrecht.

The C-2 was not the ideal craft for the long flight, but it was all the Army had at the time. Inadequate lifting power made it almost impossible to fly the ship off the ground with its designed load aboard. To become airborne, the pilot had to eject all his ballast of lead shot or water upon which the continuation of the flight at a later time might depend. Lieutenant Anderson worked out a method whereby the ground crew literally threw the ship into the air at which time Anderson at the throttle would gun the two engines and slowly gain altitude. The initial movement of the ship, Anderson later described, was enough to aerodynamically lift the ship by the movement of the air currents around the sausage-like envelope. It was sufficient to allow Anderson to take some 500-600 extra pounds of fuel and ballast on the flight and still become airborne. They had to take the southern route to avoid the Rocky Mountains wherever possible and stay below 5000 feet to prevent bleeding of hydrogen. Because of his experience, Lieutenant Anderson was designated as pilot and navigator. However, Major H. A. Strauss, the senior man aboard, and a student of Anderson's, insisted on piloting on both takeoffs and landings. This did not please a man of Anderson's caliber who demanded perfection in such tricky maneuvers, but he had no choice. The flight began on 14 September 1922.

The initial part of the trip, Langley to Akron, Ohio, where the crew stopped for fuel and hydrogen, was uneventful. So was the leg from Akron to Dayton, Ohio, and from there to Scott Field. Good luck

could not last forever, however, and at Scott Field it deserted them momentarily. On the "throw off" Major Strauss was slow in starting the engines and the C-2 settled back toward the ground, tail first. With her stern almost dragging, the engines came to life. The struggling ship roared across the field and staggered into the air, but not before the bottom tail fin had scraped across the field's boundary fence. The damage was not great enough to interrupt the flight, so the C-2 and her crew continued on to San Antonio. By this time word of the transcontinental flight had reached the press and reporters and photographers met the airship when Strauss landed.

The Major insisted on piloting the ship on takeoff which was scheduled for four o'clock the next morning. The air was still providing no lift whatever, as once again the ground crew "threw" the airship into the air. As before, Strauss was slow in cutting in the engines and the airship scraped sagebrush as it slowly gained altitude and headed for Gonzales, New Mexico. Somewhat chastened by his previous near-crashes, Major Strauss offered to refill the ship with hydrogen sufficient to get the crew from Gonzales to Yuma, Arizona, the next leg of the flight. He told Anderson and the other crew members to go get a Mexican dinner while he worked with the ground crew. When Anderson and the crew returned, Strauss stated that the airship was filled and ready for flight. Anderson recalled that the envelope of the ship sagged in the middle indicating too much weight and not enough gas.

Nothing the Lieutenant could say would persuade the Major that the weight of the ship was wrong and that a takeoff in that condition would be disastrous. Strauss suggested that the C-2 be walked up a small hill overlooking the field and gain the advantage of height in the takeoff run. Not a breath of air was stirring when the ground crew reached the top of the hill. Strauss ordered the crew aboard and all complied but Anderson. "I'm not getting aboard. I'll walk in," he said. The rest of the crew held their breath as Anderson faced Strauss in a deliberate disobedience of an order. The Lieutenant calmly explained to the astonished Major that with the ship that heavy it would settle almost immediately upon becoming airborne. Directly below was one of the airfield's hangars. Anderson predicted a fiery crash and flatly repeated that he wanted no part of it. After a long silence, Strauss gave orders to walk the C-2 back down the hill for the takeoff. Thrown into the air again, the airship settled back to earth almost immediately, tearing off two landing pontoons and ripping the balance weight off the rudder. The latter was workable and could not be repaired at Gonzales anyway. The infuriated Major now allowed Anderson to complete the filling of the gas bag, rocking it as he did so to remove air pockets as they settled to the bottom of the bag. Anderson added over 175,000 cubic feet of hydrogen, weighed the ship and lashed the damaged pontoons to the side of the gondola. The ship was still heavy, but Strauss allowed Anderson to pilot on takeoff and the blimp rose nicely.

After a short stop to top off the gas, the C-2 was flown into Arcadia, California. Once again Strauss insisted upon taking the controls for the landing, by now covered by many of the press and awaited by hundreds of bystanders. It was dark and the hydrogen had cooled considerably, severely limiting its lifting capabilities. Anderson directed that all available ballast be jettisoned and warned the crew of a hard landing ahead. Undaunted, the Major steered the nose-high airship over a grove of eucalyptus trees at the end of the field at between 100 and 150 feet. Anderson warned him of the danger of a hard landing but the Major said nothing and looked "daggers" at the upstart Lieutenant. Just over the trees and in front of the crowd the Major cut the engines. Anderson yelled to the crowd to scatter as the C-2 settled to earth with a resounding thud. The already damaged pontoons were torn loose and the bottom tail fin smashed, necessitating an extended stay in California for repairs. The transcontinental trip had taken ten days, and the desired publicity had been received. That was small consolation to an embarrassed Anderson as he awaited repairs for the return flight. To him the nearly disastrous landing was ". . . a hell of a way to finish that cross-country flight."[14]

A new tail fin arrived from Akron and the return trip, again designed to capture headlines by exceeding the trip out in speed, was planned. The first stop was to be El Paso, Texas, a distance sufficient

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[14] Ibid., pp. 12-18.

to require an extra fuel load which made the airship heavier on takeoff. That tricky maneuver was managed and the C-2 proceeded at a low altitude as the heavy gasoline was gradually consumed. Tired from his sightseeing in California, Master Sergeant W. E. Fitch grew sleepy as the trip progressed. Assigned the duty of hand-pumping gasoline from a storage tank to the gravity-feed tank for the engines, he fell asleep. The eight minutes supply of fuel in the tank was rapidly consumed after which both engines quit. Captain G. A. McEntire, the C-2's engineer, worked frantically to keep the heavy ship from settling to the ground. At the last minute he succeeded in starting one engine, but as the propeller began to spin it struck the ground and shattered. One piece went through the gondola and the other angled up into the hydrogen bag cutting a slash nearly fourteen feet long and continuing out the top of the bag where it made a smaller hole.

The C-2 began losing gas immediately and the once taut envelope began to sag. The airship was tied to clumps of sagebrush as the entire crew hastily patched the largest gash with rubber cement. Without ladders it was impossible to reach the hole near the top of the bag. The small amount of surplus gas carried for emergencies was used to provide as much buoyancy as possible, but Anderson felt the still-leaking C-2 could not carry more than two people. He would fly the ship in and take Fitch with him to pump gas to the one remaining engine. Once again the intrepid Major Strauss insisted on going along.

Anderson refused to go with only the Major, so all three climbed aboard and the rest of the crew gave the damaged airship a heave into the air. Anderson gunned the one engine and the C-2 limped into El Paso. The ship was so heavy that Anderson let it scrape itself to a halt on the field. The remaining crewmen hiked five miles to a train depot and rode the rest of the way into El Paso.

It took nearly four days to repair the C-2 but once completed and inflated, it was ready to continue the flight to the next stop, Brooks Field, San Antonio, Texas. This time the takeoff and landing were uneventful, a rare accomplishment for the record-breaking crew and their ship. On the morning of 17 October 1922, a publicity flight had been arranged for the local press. A flight over downtown San Antonio was planned to allow photographers to take aerial pictures of the city. The day was cloudy, quite cool and, most importantly, very windy, with gusts up to forty miles per hour. Anderson recommended the flight be cancelled because of the difficulty in handling the bulky airship in such wind. Once again, Strauss overruled him and gave orders for the flight to proceed. Strauss reminded Anderson that they had flown together in such a wind at Langley, to which the Lieutenant countered that it had been done but the airship had been loaded in a hangar and flown right out of its shelter. With this Strauss ordered the airship loaded with eight people inside the hangar, and directed the ground crew to open the hangar doors and haul the airship out. The fabric of the C-2 was old

and the stress exerted upon the ship by the wind caused the maneuvering party to tug all the harder at the mooring ropes. In doing so a section of fabric about fifteen feet square was ripped out of the side of the C-2 and the airship sagged out of control. The wind pushed the limp bag into the steel supports of the hangar door and the sparks created by the dragging of the gondola across the cement ramp ignited the hydrogen. The C-2 went up in flames, but the passengers were able to leap out before they were burned or otherwise injured. So ended the nation's first transcontinental airship flight.[15]

The crew of the record-setting C-2 returned to their various duty stations. Anderson went back to Scott Field to await what he confidently expected would be disciplinary action against him for insubordination to Strauss. On 23 December 1923 he received a letter from Major General Mason M. Patrick, Chief of the Army Air Service. Instead of disciplinary action the letter praised Anderson for the "creditable" performance of his duty as a crew member. General Patrick felt the trip out and back and the adversities faced indicated an ". . . ability to undertake airship service of the most hazardous kind." The third paragraph of the letter was probably the most pleasing to Anderson and it revealed Strauss to be a man of considerably greater character than he appeared to exert on the flight itself.

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[15] Ibid., pp. 19-23.

> 3. The report of the Commanding Officer of the Flight indicates that throughout the entire trip he was accorded the full cooperation and hearty support of the crew, and that in every way you fully lived up to the responsibilities imposed upon you. It gives me great pleasure to express my sincere appreciation of such services.[16]

All was not peace and quiet after the exciting trip aboard the C-2. Even the most basic training flights had their elements of danger for the newer and smaller "pony blimps" were very much at the mercy of the elements. By now Anderson was one of the most experienced lighter-than-air men in the Army and among the few (several of whom were in the Navy) in the United States. The Army still clung to the observation mission for the airships and made gradual improvements on the newer model blimps which they purchased. The engines had more power, the gondola was better stressed and hung flush beneath the gas bag and the material which held the gas was gradually improved to prevent the excessive leakage with which the crew of the C-2 had to contend. One thing the bulky blimps simply could not do was fly in a controlled state in a storm or wind of any magnitude. A sudden squall or wind increase could turn a peaceful training flight into a nightmare in which two or more crewmen might be reduced to simply hanging on for dear life as the blimp, despite its engines, was tossed around the turbulent skies. Such was the case when Lieutenant Anderson, the

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[16] Letter, General Patrick to Anderson, 23 December 1922, file, "Awards, Commendations and Decorations," Archives 168.7006-20. Hereafter cited as Awards.

instructor pilot, found himself aloft with his student, a Lieutenant Brown, on a training flight in November 1922.

As they departed Scott Field at 10:45 in the morning there was no hint of bad weather in the making. The flight was about half over when the wind sharply increased in velocity. Anderson took over the ship and headed for Scott, but the winds were coming from the direction of the base and were blowing so hard that it took full power to simply hold the ship in one place. Ground crews chased after the pony blimp and attempted to grab the mooring lines while Anderson attempted to hold the ship steady. It was of no avail as the wind blew the bulky shape every way but toward the base. By careful navigation and piloting Anderson placed the ship over a field in southern Illinois just after lunch. A hastily assembled ground crew awaited the ship, but the try was in vain as the wind velocity again increased and blew the little ship across the field before any of the ground party could grab the dangling ropes. Two other trys were made that afternoon to land the airship, but each met with failure. By holding the nose of the ship on a southwest course Anderson could control, to a small extent, the amount of drift. As a desperation measure he attempted to get the airship close to the ground to attempt a "rip landing." Such a landing was reserved for serious emergencies and consisted of pulling a lanyard attached to fabric panels in the skin of the blimp. A yank on the rope would rip the panels allowing the gas to escape and the blimp to collapse in a heap. Each time

Anderson attempted to get close enough to the ground to "rip" and minimize the distance he and Lieutenant Brown had to fall, strong gusts of wind would lift the little airship back up into the air. When this tactic failed, Anderson cut the engines to save what little fuel was left for a future landing. With this the pony blimp simply free-ballooned at the mercy of the wind, and Anderson and Brown hung on as best they could, steering whenever possible, and riding with the wind when they could do nothing else.

The blimp seemed to choose an altitude of around 2500 feet at which to "fly." This was high enough, Anderson decided, and valved gas and dumped pieces of parachutes to maintain the ship at this height. By nine o'clock that evening the ship had leaked gas in sufficient quantities that it began to settle toward the earth. The wind had died down somewhat which allowed the two airmen to look for a place to land and to attempt a position fix. The latter was impossible at night and Anderson elected to allow the ship to drift into some trees, hoping to collapse the envelope at the last minute to prevent damage. His plan was very nearly successful. As the blimp touched ground, Anderson yanked the lanyard, collapsing the envelope. The folds of rubberized cloth fell on the branches of a tree puncturing a few holes while the airmen stepped out of the gondola unscathed. A local farmer located the pair, and their airship, about three miles northwest of Bynum, Alabama, a small town in the northeastern section of the state.

It had been a skillful and dangerous piece of flying during which no one would have criticized Anderson for executing a "rip landing" thereby endangering the airship and risking the lives of his passenger and himself. Instead, Anderson elected to stay with the airship, ride out the wind, and in so doing, minimize the danger all around. The next morning he secured a detail of soldiers from nearby Camp McClellan, Alabama, who packed the airship and sent it back to Scott Field. The two airmen boarded a train and headed back to their home base, a much longer trip than the windy ordeal they had experienced the evening before. It was a much relieved Anderson household when the two men finally reached home base.[17]

Once again Anderson's skill and calmness under great stress paid dividends. In a commendation letter to Anderson in January 1923, the Assistant Executive to the Chief of the Air Staff, Captain Hubert R. Harmon, wrote:

> 1. It is shown in the Report of a Board of Officers which investigated the flight of a pony blimp from Scott Field to Bynum, Alabama, that you, as pilot, conducted this flight with marked skill and good judgment under most trying conditions.
> 2. The Chief of the Air Service desires to compliment you upon the ability with which you met each successive emergency and finally when a rip landing became inevitable, brought your ship to the ground with little damage and with no injuries to the crew.[18]

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[17] File, "Flights and Landings--Accident Reports," Archives 168.7006-35.

[18] The letter is dated 15 January 1923. File, "Awards."

A naval appropriations bill in mid-1919 set aside money for the construction of a rigid airship in the United States. Made from German designs, the ZR-1 was christened the Shenandoah in September 1923. With the huge, slender ship went an upsurge in the fortunes of the Navy air effort. The airship made the first transcontinental dirigible trip non-stop, and topped it off by making one round trip. The "Daughter of the Stars" made quite a sight floating in the skies, and the Army was most anxious to have a part of it. The tragic crash of the Shenandoah in an Ohio cornfield on 3 September 1925 cooled the ardor of both the Army and the Navy, and led to the famous court-martial of General William Mitchell for his outspoken beratement of the Navy for allowing the ship to fly into a violent weather front. Lieutenant Anderson was ordered to Lakehurst, New Jersey, home of the Navy's lighter-than-air effort, to gain experience in flying the huge rigid ships. Always one for a trip, Mrs. Anderson went with him. Later to be the scene of the final tragedy in the history of dirigibles, the fiery explosion of the Hindenburg in 1937, the Navy had located its Rigid Airship School there, and it was to this school that the Army sent Anderson.

While at Lakehurst, the Andersons met naval Captain William A. Moffett, later a Rear Admiral who perished with eighty-two others in the crash of the USS Akron in 1933. He, and then Commander Charles E. Rosendahl, was the best known and most experienced

lighter-than-air pilot the Navy had.[19] Anderson also met Army Captain William E. Kepner in his class at Lakehurst. Their paths would cross again almost ten years later as crew members on the famous Explorer I balloon flight to the stratosphere. At this time, the two, along with six other Air Service officers were taking the Navy's courses in dirigible piloting. One of the courses offered was navigation, a subject at which Anderson, while self-taught for the most part, excelled. Typically, Anderson openly disagreed with his Navy instructor, who later warned Kepner, as a more senior officer, that no Navy commanding officer would allow such a man as Anderson on his bridge. When Kepner relayed this information, Anderson stated flatly that "in that case I'll stay off his skipper's bridge, and I'll take his exam in Navigation anytime." Kepner relayed Anderson's remarks and the subject of Anderson's proficiency in navigation was never brought up again.[20]

The course was not so demanding that Anderson could not pursue his favorite sport, golf. Rather average at the game, Anderson was often paired with Rosendahl during his afternoons on the course--

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[19] Rosendahl is today a Vice Admiral, USN(Ret.). He is the only man to have flown every type of lighter-than-air craft made from 1924 until 1962 when he piloted the last military blimp on its final flight. Admiral Rosendahl is currently working on a history of LTA activity in the United States and is the author of two previous books and many articles on the subject. Letter, Admiral Rosendahl to the author, 10 April 1969.

[20] Letter, Lieutenant General William E. Kepner, USAF(Ret.) to author, 25 May 1970.

an occasion when both usually lost what religion they had and turned the air around them blue with unprintable words. Both men were noted for their ability to swear, but in the game of golf, Rosendahl won, hands down. On one particularly vexing afternoon, Rosendahl, playing with a set of the new, steel-shafted clubs, seemed unable to keep his golf ball on the fairway. After an especially poor drive he gave vent to his emotions by bending a club around the nearest tree. This horrified Anderson who had looked with envy upon the clubs since the game began. When this incident was repeated a second time, a cowed Anderson played the rest of the afternoon in near silence. He did speak up once to ask Rosendahl to please give him the clubs rather than ruin them around the nearest tree, but the request went unheeded and the golf game continued with a truce of quiet.[21]

Admiral Rosendahl recalled the Rigid Airship School with a great deal of pleasure. In response to a call for volunteers, he had transferred to Lakehurst from submarines. There he was a member of the same class as Anderson; "Army" Anderson he was called because there was a "Navy" Anderson in the class as well. While at the school, this particular class, Rosendahl remembers, was fortunate enough to be able to fly in the Shenandoah. Rosendahl was the navigator aboard the ill-fated airship at the time of the disaster in 1925, and, along with several other crewmen, free-ballooned the tail section to earth after it

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[21] Interview, Mrs. Anderson, March 1969.

snapped away from the rest of the ship in the storm. He, too, remembers the many golf games he and Anderson participated in, and feels that they were both "fairly good golfers (about 8 handicaps)." "We had," he recalls, "many a great day together on the golf course . . . it kept us out of other trouble, I guess."[22]

The course at Lakehurst completed, and no airships currently in the Army inventory to fly, Lieutenant Anderson once again applied for heavier-than-air training. This time he was successful and the Andersons pulled up roots to head for a new duty station. Brooks Field, San Antonio, Texas, was the scene of most of the Army Air Service's pilot training and it was here that Anderson finally gratified his wish of 1917 by winning his wings in March of 1925. He enjoyed the unique position of possessing the wings of a balloon pilot, an airship pilot, a balloon observer, and now pilot wings. The Andersons shifted duty station across town to Kelly Field where he entered advanced pilot training. He completed this course in September 1925 and earned yet another pair of wings--this time, airplane observer.[23] Anderson's knowledge of navigation was put to good use in the classroom, and his considerable previous experience qualified him for the position of Commandant of Cadets at Kelly. It was a short but pleasant interlude during

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[22] Letter, Admiral Rosendahl to author, April 1969.

[23] War Department General Order #19, 22 September 1925, Section II. File, "Physical Exam Reports from Flight Surgeon's Office," Archives 168.7006-18.

which the problems of lighter-than-air took a back seat to his first love--the airplane.

The Army had not finished its investigation of the airship program. Despite the Shenandoah disaster, the Los Angeles continued to gain valuable publicity and more appropriations for the Navy. The mission of lighter-than-air observation was still a prime requirement for the Army and a means had to be found to accomplish it. The belief was still very strong that, in this respect, the airship was without peer. The old mistrust of the observer in an airplane still remained. Accordingly, the Army purchased the American-made, semirigid RS-1 in 1925. There was only one choice for a test pilot on the new ship, so the Commandant of Cadets and his wife packed up once again in November 1925 for a move to Scott Field, Illinois, where Anderson assumed command, still as a First Lieutenant, of the 8th Airship Company.

The RS-1 was America's first attempt to build a semirigid airship. It had its faults, Anderson recalled later, and the testing consumed the better part of two years. The designers of the airship, Goodyear-Zeppelin, claimed the nose was stressed for speeds up to eighty miles per hour. It was up to Anderson to test this claim. He did so most convincingly. As he related it:

> We tested it throughout its range. In one of these tests . . . we knew that we were going to crumple its nose, but we had to prove it. So we put an observer in the nose with an immediate signal back to me that if the nose began to fold he would signal and I would cut the

> motors . . . . The rigid structure . . . [was] . . . built to provide a nose for penetrating the atmosphere, taking the front pressure; and the thing could not be built to take it above that 62-1/2 mile per hour limit.

Anderson went on to describe the collapse of the first nose at that speed, its replacement by another one-half again stronger, and the succeeding tests that folded the second nose back into the bag. The RS-1 had sufficient power to reach seventy-five miles per hour but the design of the ship caused the nose to either collapse or accordian back into the bag at the same sixty-two and one-half miles per hour.[24]

As a result of these tests Anderson compiled a table of maximum speeds for the RS-1 ranging from forty-five miles per hour in a no-wind condition to forty miles per hour in extremely turbulent atmosphere. Other troubles appeared during the year of testing, namely in the tail which also began to fluctuate erratically at speeds near those of the nose collapse. Finally, Anderson sat down and analyzed the semirigid airship for the Chief of the Air Corps. Either the ship had to be constructed of heavier material and with stronger supports, which put it nearly into the category of the Navy's dirigibles and was out of the question from the funds standpoint, or the Army had to accept the much more vulnerable slow speeds of which the design was capable. While the airships could lift good sized loads, Anderson found, the semirigid structure was simply unsound. As a result of his findings, Anderson

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[24] Hopper, Interview, Sept. 1943, p. 8.

concluded his report by recommending to the Chief ". . . that the semi-rigid airship appeared to have no real military value and that we should not use it." Neither the Army nor the Navy built any more semi-rigid airships as a result of this recommendation.[25]

In the summer of 1927, the airship tests complete, Anderson was allowed to return to airplanes. He reported to the Commanding Officer of Camp Nichols, just outside Manila in the Philippine Islands. The year 1926 had been very significant for the Air Service. As a result of an extensive investigation of the Service by the Morrow Board, appointed by the President partially to quell the tremendous publicity being given the trial of Colonel William Mitchell, several organizational changes were made. The Air Service became the Army Air Corps, an Assistant Secretary of War for Air was added, and provisions and appropriations were made for a five-year expansion program of the young service. All these things, important as they were to him, did not concern the Andersons greatly as they boarded a ship for their new station. His assignment upon arrival was as Air Operations Officer at Nichols Field, first with bombers and later with fighters. Life was easy in the islands; there were schedules to be met and maneuvers to be flown, but there was ample time to fly, and that suited Anderson. He proceeded to make up for lost time and in doing so, suffered his first airplane accident.

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[25] Ibid., p. 9.

On the morning of 23 August 1928, Anderson and a crew of three men went aloft for a routine training flight in a twin-engine NBS-1, the best bomber then in the general inventory, but already outmoded by new designs. The weather conditions were very good for a visual flight at the 9:30 A.M. takeoff. The flight was uneventful and Anderson began the standard let-down procedures for a landing. At an altitude of 900 feet, and still some thirty-five miles from the field, the right engine suddenly quit. The twin-engine, bi-wing bomber was capable of flying with only one engine so Anderson continued his approach to a landing. His efforts would have been successful had not the left engine suddenly quit as well. There was no choice but to attempt a crash-landing on one of the many rice paddies surrounding the field. He put the big bomber into a gradual glide toward the ground in a nose-up attitude hoping that the bomber's tail skid would drag the ground first and pancake the plane into the wet surface. His plan was excellent until the main undercarriage hit the mud. The plane skidded some twenty yards and then flipped over on its back, leaving the four men dangling upside-down from the fuselage of the airplane. Anderson unfastened his seat belt and wiggled out of the plane as did two of the other three crewmen, all unhurt. The fourth airman, thirty-nine year old Staff Sergeant Emil G. Schmolka had suffered a skull fracture and crushed vertebrae. The others pulled him free of the wreckage just as

it burst into flames.[26]

Back at the base word was received of the crash and an ambulance set out for the crash scene. Due to the lack of roads it took the ambulance two hours to reach the downed airmen. The base doctor had commandeered a staff car and had dashed on ahead, but he could do little by way of treatment since all his equipment was in the ambulance. By this time, Anderson and the others had located a Filipino doctor who administered first aid to the Sergeant and for the cuts and scratches sustained by the others. Mrs. Anderson's first notification of the accident was by a telephone call from the base commander who was able to assure her by then that her husband was unharmed.[27]

In the spring of 1929, Anderson began flying fighters out of Clark Field on the north side of Manila. He approached this assignment with equal enthusiasm, but he never completely lost his love for bombers. His duties were similar, but the social life was much more extensive. While they were there, the Andersons met General Douglas MacArthur on numerous social occasions. While not close friends, they developed a warm admiration for the General which Mrs. Anderson recalls affectionately to this day. Unmarried at the time, the General

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[26] Accident report dated 25 August 1928. File, "Flight Surgeon's Records, " Archives 168.7006-16.

[27] Interview, Mrs. Anderson, March 1969. The accident report blamed faulty ignition wires and exhonerated the pilot.

stayed very much to himself except on formal occasions which required his presence. "No one seemed to know the Oriental mind as well as did General MacArthur," Mrs. Anderson recalled years later. "To know him was to respect him."[28] It was from General MacArthur that Lieutenant Anderson received a letter of commendation for a mercy flight he made in March of 1930.

On the 7th of March, the wife of First Lieutenant James A. Whelan, Jr. became seriously ill in their quarters at Camp John Hay near Baguio in the north-central part of the Island of Luzon. It was imperative that she be moved to Sternberg General Hospital in Manila as rapidly as possible. The only transportation available was the Camp's ambulance, and the distance was great over unimproved roads. Using these accommodations the trip was begun but not before a call for help was sent to Nichols Field. Anderson was flying observation planes with the Second Observation Squadron out of Nichols and received the call. He took off flying north along the route of the ambulance coming south. As soon as he had intercepted the ambulance, he landed in a cleared field nearby, picked up the patient and flew her back to Nichols for transfer to the nearby hospital.

Later that week, Lieutenant Whelan sat down at the Army and Navy Club in Manila to write Anderson's commanding officer. "It is impossible," he said, "for me to express my inner feelings for the

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[28] Ibid.

kindness, skill and comfort we experienced. Without the aid of the plane furnished we should never have completed the movement that day. She is still very sick, but what comfort she has is to a great extent due to the expeditious manner in which you and those under your command helped us."[29] From the office of the Department Commander, Headquarters Philippine Department, Manila, came a much more interesting, if not as touching a letter. It read in part:

> 2. I desire to commend you for the excellent judgment, initiative and devotion to duty displayed by you in this case. Your action in proceeding with your airplane up the Baguio Road to meet the motor ambulance in the face of numerous difficulties, showed good judgment and is deserving of especial commendation.

The letter was signed, "Douglas MacArthur, Major General, USA, Commanding."[30]

The Anderson's regular tour of duty ended the following summer, but duty in the Philippines was sufficiently attractive to cause them to extend it for nine additional months. Anderson flew almost every day and piled up many hours in almost every aircraft on the island. In the spring of 1931, he again asked for an extension, but this time it was not granted and orders arrived reassigning the Andersons to Kelly Field, Texas, where he was to become an instructor in the now greatly expanded Advanced Flying School. These were the

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[29] Lieutenant Whelan's letter was dated 12 March 1930. File, "Awards."

[30] Ibid. Letter is dated 17 March 1930.

depression years and they affected couples in the service almost as much as their civilian counterparts. Yet these were happy days for the Andersons were among old friends and he was doing even more flying than he had in the Philippines. They were content to let economic and political events handle themselves, but the Army had different ideas.

Still clinging to the concepts of lighter-than-air, the Army Air Corps had purchased a new, nonrigid "blimp-type" airship, the TC-13. Built by Goodyear-Zeppelin, the TC-13 was considered to be the best airship of its kind in the world. Weighing nearly eleven tons and over 200 feet in length, the TC-13 and her sister ship, the TC-14, had streamlined gondolas forty-four feet long and snuggled into the bottom of the bag rather than suspended beneath it by cables or ropes. The airship could carry 2400 pounds of bombs and a crew of six, and was intended for coastal defense (the current mission of the Army Air Corps) and submarine patrol. To test the new ship the Army selected its most qualified lighter-than-air pilot, Orvil Anderson. Against his personal wishes, but dutifully nonetheless, Anderson left his airplane flying and returned to the "gas bags." It necessitated another move, this time to Langley Field, Virginia, where the old airship hangar provided the necessary facilities.

Lieutenant Anderson went to Akron, Ohio, to the Goodyear-Zeppelin Company's plant in March 1933 to study the new ship and

watch the final work being accomplished. It took longer than expected so the move to Langley was delayed until July of that year. There followed an intensive series of tests designed once again to prove the worth of the big airship in coastal patrol involving combat. In design, the new ship proved to be all that the earlier ships had not been. Equipped with a rubber-tired wheel on the bottom of the gondola, the airship could be taxied to sufficient airspeed to allow for a takeoff even with a heavy load. No longer was it necessary for a ground crew to heave the blimp into the air to gain the extra lift needed for long flights. It was during these prolonged flights over water that Anderson wrestled with the problem of controlling and flying a blimp in the face of strong winds over open water. Often springing up without warning, and totally undeflected by any obstruction in the open sea, winds could reach such velocities that the airship would have to fly at full speed, fifty miles per hour, into the wind just to stay in one spot. Winds of any greater strength would toss the bulky airship all over the ocean, completely negating its military value of coastal defense. What was needed, Anderson decided, was an airship anchor. He promptly put his mind to devising one.

Designed to be trailed in the water by a rope attached to the gondola, the canvas anchor Anderson constructed resembled a tapered bucket going from a forty-four inch opening down to an inch and a half exit over a distance of four feet. It would provide enough drag to

prevent the airship from slipping more than about two miles an hour from its initial position in a forty-five mile-an-hour wind. The goal of the inventor was to neutralize almost ninety per cent of the effect of the wind upon the bulky rubber blimp. As he described it, "When the anchor is in the water the airship can ride out the gale until the wind shifts. Of course, it is not doing any patrolling at that time. In more normal wind we could drop the anchor and the ship would be stable as could be desired and we could go back and cook a meal or play bridge."[31]

Not everything concerning the anchor was so easy during the TC-13 tests. To determine if the airship, properly anchored, could ride out the passage of a weather front at sea, Anderson took it out to sea some fifty miles and cast the anchor overboard. Facing it into an oncoming weather front, he tried twice to ride the big airship through the turbulence and each time the force of the wind hurled the blimp into the sea. Each time Anderson was able to rescue it by skillful piloting and cool thinking despite the fact that the TC-13 was actually taking water on one occasion. While these tests failed, Anderson had, at least to his own satisfaction, proved the utility of the sea anchor in relatively calm weather. The anchor did not function in quite the same manner as did a boat anchor, but it held the airship to a relatively small area despite the effects of high winds. The invention did not make him famous.

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[31] Leish, Interview, Dec. 1960, pp. 48-51.

In fact, the Navy never adopted the idea because it would not hold an airship in a frontal weather condition, but it remained an immense satisfaction and source of considerable pride to him that he did accomplish, at least in part, what he set out to do.[32]

With the 600 hours of tests on the TC-13 completed, Anderson filed his report with the Chief of the Army Air Corps. The blimp responded to every test devised for it as well as a few unexpected ones. It had performed well for an airship, and, in general, had lived up to the claims made for it. The problem was, could the Army Air Corps use a blimp for coastal defense in the day of the B-9 and B-10 bombers? The B-10 could cover three times the area of the blimp with half the crew. In a sixty mile-an-hour wind, the B-10 could still do approximately four-fifths of its assigned mission while the TC-13 was immobilized. There was a continuity and reliability in the bomber which the blimp in 1933 simply did not possess. There had been a time when the state of the art of the airplane had been such that the blimp would have been an effective instrument of patrol, but that day, as Anderson saw it, had passed. Accordingly, he recommended that the Army Air Corps discontinue its airship program. "It seemed to have no military worth," he wrote, and the Army agreed with him. With the exception of barrage balloons during World War II, the Army consigned its lighter-than-air program to the past. Much more important to the Air

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[32] Hopper, Interview, Sept. 1943, pp. 9-15.

Corps theoreticians was the development of the long-range strategic bombing plane, which in 1933, was well under way.[33] By November of that year, Orvil Anderson felt he had seen the last of his airship days. Despite his lengthy experience in lighter-than-air flying, Anderson did not advocate building additional large dirigibles, either commercially or militarily when Admiral Rosendahl and others proposed them after World War II. He considered his airship experience to be "wasted specialized training" in later years since he never flew a blimp after that.[34] Wasted it was not, however, for just ahead lay probably the singly most significant accomplishment of his military career--and it was brought about by a lighter-than-air balloon.

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[33] The Army airships TC-13 and -14 were transferred to the Navy in 1937. They were used on the west coast in early 1942 for anti-submarine patrol. The Navy continued an active LTA program until 1962.

[34] Hopper, Interview, Sept. 1943, p. 14.

CHAPTER II

INTO THE STRATOSPHERE

The testing of the TC-13 concluded, Anderson was prepared to return to his instructor duties at Kelly, but the days of peacefully teaching flying were over. The year 1933 was a turbulent one in American history. A depression that had its origins in the stock market crash of 1929 caused the economic life of the nation to stagnate. Businesses failed, unemployment rose, manufactured goods and farm produce went unsold while people starved and bread and soup lines formed in cities all across the nation. It was, in short, one of the darker moments in the economic history of the United States. A new President told a frightened nation that the only thing they had "to fear is fear itself." The famous "Hundred Days" which followed did much to restore some semblance of calm, if not the previously enjoyed prosperity. Emergency acts followed one upon the other in rapid succession as Franklin D. Roosevelt sought to stabilize the nation and halt its plunge into bankruptcy.

The depression had a profound effect upon the rapidly expanding aircraft industry and the budget of the Army Air Corps. Ever since

the renowned flight of Charles A. Lindbergh in 1927, airplane flying had taken on a new respectability in the United States. Airlines doubled their business in the year following the famous transatlantic flight. The Army Air Corps had received more, but still inadequate, attention from the people and Congress which allowed the beginning of a program to update its equipment. P-12 pursuit planes entered the inventory in 1930, radios allowed ground communication while in flight, blind flying instruments were invented, and by 1932 two new heavy bombers, the B-9 and the B-10 were added to the inventory. Contracts were let to the aviation industry to allow for a flow, however small, of advance designed airplanes incorporating the latest in technology. Better off than ever before, the Army Air Corps rode out the reduced budgets of 1933 only to find the rug pulled from beneath them early the next year.

In 1925, Congress had passed the Kelly Act which encouraged commercial aviation by allowing the Postmaster General to contract for air delivery of mail. This act, plus the public confidence in flying engendered by Lindbergh's flight, sparked the development of civil airlines. To the lucrative airmail contracts, the airlines gradually added passenger revenue. When the contracts for mail delivery expired the first time, President Hoover's Postmaster General, Walter F. Brown, favored the larger, better-established airlines in renewal talks. This sparked many protests from the smaller lines and ultimately a Senate investigation. The result of the clamor was the cancellation of all

contracts by President Roosevelt, who then ordered the Army Air Corps to fly the mail. Major General Benjamin D. Foulois, Chief of the Air Corps, accepted the challenge in full knowledge that there were not enough planes, pilots, and related equipment to do the job of the many airlines in a proper manner. It was a chance for the struggling air arm to bring its plight before the public, and an opportunity to do this was worth a considerable risk.

Working at top speed, General Foulois organized the Army Air Corps on as near a wartime footing as he dared in peacetime. Routes were carefully plotted and men and planes were stationed along approximately half of the mail routes previously flown by the airlines. General Foulois prepared for everything--except the worst winter weather the nation had experienced in several decades. Crash followed crash as the Air Corps struggled to meet the airlines' established delivery schedules utilizing equipment that was outdated, not designed for the task, and with an insufficient quantity of personal flying clothing to prevent frostbite and pneumonia among the pilots. Inexperience in nighttime and weather flying due to budget limitation restraints on training flights was evident almost immediately, and "crash" courses in navigation were hastily organized.[1] First Lieutenant O. A. Anderson was ordered from Langley to the Metropolitan Airport, Newark, New

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[1] Carroll V. Glines, Jr., Lt. Col. USAF, Compact History of the United States Air Force (New York: Hawthorn, 1963), pp. 127-33. See also Henry H. Arnold, Global Mission (New York: Harper & Bros., 1949), pp. 142-45.

Jersey, in late February to establish and instruct a course in cross-country navigation. Fresh from a refresher course at Langley, Anderson was already an experienced navigation teacher. He had established an instrument flying school at Langley which he had run consecutively with his navigation school. Many years later he described his work at Newark, and at Mitchell Field, Long Island, during that spring of 1934:

> Actually the job came to be showing the kids that they couldn't. . .fly blind; that they should only fly when they could see two beacons. I did develop five or six that I felt were qualified for instrument flying, but the mass of them couldn't, and I told them if they couldn't see two beacons to turn back.[2]

After nine pilots were killed in airmail plane crashes, the President ordered the Air Corps to stop delivery on 1 June 1934, and asked Congress to pass the Air Mail Act of 1934 which he signed twelve days later. Postmaster General James A. Farley, in thanking General Foulois for the Air Corps' heroic efforts, felt that the country and Congress would probably be more willing to give support to the Air Corps to see that

> . . . sufficient funds are provided for the flyers to have the additional hours of flying which have so long been needed . . . . Had it not been for the Army Air Corps the country would have been without any air mail service for a period of more than three months. It is a notable fact that not a single pound of mail was lost during the time the Army had flown the air mail.[3]

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[2] Interview, Hopper, Sept. 1943, pp. 15-16.

[3] As quoted in Glines, Compact History of the USAF, p. 132. The Air Corps carried 777,389 pounds of mail over 1,590,000 miles in nearly 13,000 flying hours.

Wanting desperately to be an independent service on a coequal basis with the Army and Navy, the Air Corps sought to reorganize itself and expand its mission. The War Department appointed a board in 1933 headed by Major General Hugh A. Drum to investigate the functional organization of the Air Corps and the following year the President appointed the Baker board, headed by former Secretary of War Newton D. Baker to explore the mission of the Air Corps in the nation's armed forces. While these groups worked, the Air Corps searched for some way to redeem themselves in the eyes of the American people for the airmail fiasco. At the same time the National Geographic Society had become interested in a proposal it had received from Captain Albert W. Stevens of the Army Air Corps at Wright Field in Dayton, Ohio, to explore the stratosphere. Airplanes of the day could not fly much above 30,000 feet, but various experiments conducted throughout the world proved conclusively that balloons, made correctly and of sufficient size to hold the large amount of gas needed, could ascend well into the stratosphere.

In November of 1927, Captain Hawthorne C. Gray of the Army Air Corps went aloft in a hydrogen-filled, silk balloon to an altitude of 42,470 feet. Inadvertent dropping of his last full oxygen bottle instead of the empty one he intended to jettison caused his death during the descent of the balloon. The next time man went aloft he carried his own environment with him. In Europe, Auguste Piccard and an assistant

used a round, pressurized gondola with glass portholes during their tour of the stratosphere to the record height of 51,775 feet. The next year the same team and equipment reached 53,152 feet. In the United States in 1933, Piccard teamed with Lieutenant Commander T. G. Settle, a two-time Gordon Bennett Balloon Race winner, in an attempt to set yet another record during the Century of Progress Exposition in Chicago. Scientists took advantage of the flight to place several experiment-recording instruments in the gondola. The first flight failed due to mechanical troubles, and Piccard withdrew before all was ready for the second one. Commander Settle and the Navy did not give up that easily. On 20 November 1933, with Marine Captain Chester L. Fordney along, Settle supervised the inflation of the 600,000 cubic-foot balloon that later the same day took the two men to a record 61,237 feet and return. The record was of short duration for news arrived in the United States that three Russians had reached 63,200 feet on 30 September of that year. In January 1934 another Russian team piloted a balloon, the largest ever built (800,000 cubic feet), to 72,182 feet but ran out of ballast and were unable to halt the free-falling balloon on the descent. All three were killed.[4]

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[4] S. Paul Johnston, Horizons Unlimited (New York: Duell, Sloan and Pearce, 1941), pp. 62-63. Also Lynn Poole, Ballooning in the Space Age (New York: McGraw-Hill, 1958), pp. 55-56, 69-75. Major General O. A. Anderson, "Ballooning in the Stratosphere," Airpower Historian, IV, No. 1 (January 1957), pp. 3-6.

There was ample precedent for the Army Air Corps to enter the balloon race to the highest point in the stratosphere. If beating the Navy record was not enough, there was the national prestige and attention, and the considerable serious scientific study already done at Wright Field, Dayton, Ohio, in high-altitude research. This had taken the earlier form of high-altitude airplane flights, aerial photography, and experiments in human survival at altitudes above 10,000 feet. Despite the continuing effort, both at Wright Field and by others throughout the world, much about the stratosphere remained unknown, a problem becoming acute as technology allowed aircraft to fly ever higher. Great was the delight of Captain Stevens and Major William E. Kepner, then at Wright Field and an experienced lighter-than-air pilot, when the National Geographic Society and the Army Air Corps jointly announced, in the spring of 1934, their sponsorship of a stratosphere flight. The purpose of the expedition, as conceived by Captain Stevens, was to secure additional information about cosmic rays, the ozone layer, and the effects of high-altitude on organisms and men. The Society agreed to finance the expedition, construction of the balloon and gondola, while the Army Air Corps furnished the pilots and ground personnel. As one of the most experienced balloonists in the United States, it was no surprise that the Air Corps chose Anderson as operations officer to inflate and launch the balloon and Kepner and Stevens to ride in the gondola, with Kepner as Commander of the flight. Stevens, scientific observer

for the flight, brought with him an impressive background of accomplishments. He was recognized as a pioneer and world expert in aerial photography, and was the holder of the world's altitude record of 24,000 feet for a parachute jump.[5]

A committee of scientists was selected to screen all tests to be performed and to carefully decide which instruments would be included in the gondola and to ascertain the value of tests to be performed in flight versus the additional weight of any extra instrument. Dr. Lyman J. Briggs, Director of the National Bureau of Standards, was appointed chairman of this scientific committee.[6] The hoped-for altitude was 75,000 feet, not only a world record, but an altitude which would permit conclusive observations and tests by the 3000 pounds of instruments within the limits of the art of stratosphere research in 1934. Looking back upon those hectic preflight days, General Kepner remarked:

> We were not just making an altitude flight. We were told what and when to do. We really prepared under the committee's guidance, to investigate and explore space in the region of the stratosphere. . . . This was to be a different flight. Hoped-for altitudes were of secondary interest--scientific data was first priority. We may not have called

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[5] Letter, Dr. Thomas W. McKnew to author, 28 March 1969.

[6] There were ten members of the committee. Lyman J. Briggs, "The Stratosphere Flight of the 'Explorer'," The National Geographic Society--U.S. Army Air Corps Stratosphere Flight of 1934 in the Balloon "Explorer," (Washington D.C., Natl. Geog. Society, 1935), p. 4. Hereafter cited as NGS No. 1.

> it Space Explorations then, but I believe it can truly be recognized now as the beginning of Space Exploration . . . .[7]

Profiting from Piccard's previous flights, a gondola was constructed by the Dow Chemical Company of Midland, Michigan. Made of Dowmetal, a magnesium alloy, it was lighter than either aluminum or steel, had walls of three-sixteenths of an inch thickness in which two manholes were cut as well as ten glass-covered portholes. The entire gondola, less the instruments and the crew, weighed almost exactly 700 pounds.

To carry this load, plus all the apparatus and crew to the desired altitude, would require a balloon of three million cubic feet, more than three times the volume of any balloon previously constructed. A balloon of such magnitude was first conceived by Captain Stevens in the spring of 1933, who then approached the Goodyear-Zeppelin Corporation in Akron, Ohio, to determine the feasibility of construction. Dr. Karl Arnstein, Vice President for Engineering, agreed to build the huge balloon if Major Kepner would fly it. General Westover agreed and the pilot was selected.[8] Armed with their specifications and their assurance, Captain Stevens, at that point, had appealed to the National Geographic Society to sponsor the complete venture. Now that the preliminaries were completed and the gondola construction underway, Goodyear-

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[7] Letter, Lieutenant General W. E. Kepner, USAF (Ret.) to author, 25 May 1970.

[8] Ibid.

Zeppelin began fabrication of the balloon from varying thicknesses of rubberized cotton cloth. Over five and one-half miles of rope would be required to secure the gondola to the envelope and for ground-handling lines.[9]

Once the balloon and gondola contracts had been let, a launch site had to be chosen. This task was left to Kepner and Lieutenant Anderson, who together spent much of the spring of 1934 traveling about the country looking for natural shelters in which such a huge balloon could be inflated with safety. To construct a building tall enough to hold the partially inflated envelope towering some 307 feet, and with doors of equal or greater height was prohibitively expensive for either sponsor especially during the depression period. Consequently, a deep depression or valley had to be found in which the balloon, once inflated, would be protected from even the slightest breezes. The choice was narrowed to a meteor crater in Arizona which gave fine protection, but required the expenditure of a great deal of money for roads and base camp facilities, a site near Lander, Wyoming[10] and a natural bowl in the Black

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[9] NGS No. 1, pp. 95-96, 110-111.

[10] While surveying the site with Kepner, Anderson shot some grouse, forgetting that they were out of season. An avid hunter, he was embarrassed when informed of his mistake. A friend offered to cook the birds and they ate them seated in front of a large window in the town's best restaurant. The next day, as they prepared to leave, the town marshal escorted them to the plane and suggested that they should seriously consider Lander as a launch site since they could "do lots of shooting when its in season." With this, Anderson picked up the luggage and hurried off to start the engines, leaving Kepner, the marshal and others regaled with laughter. Ibid.

Hills of South Dakota, eleven and one-half miles outside of Rapid City. The latter bowl was sheltered fairly effectively on three sides, and partially sheltered on the north side. The two Air Corps crew members ran several tests to determine the effects of the wind in the natural bowl, including the floating of small balloons in groups of fifty, 150, and 300 attached to ropes anchored to the bowl floor so that their reaction could be observed overnight. On one occasion a pile of old tires was burned and the resulting black smoke studied for any sign of tricky air currents. The tests were convincing, and the South Dakota bowl was chosen.[11]

Anderson returned to Langley, wound up his affairs there and with his wife headed out to Rapid City, where it became his duty to organize the base camp. He made all necessary arrangements with the local officials through the Rapid City Chamber of Commerce and with the military authorities at Fort Meade, near Sturgis, South Dakota, for ground crew personnel. The new assignment began happily enough when, on 1 June 1934, a telegram arrived notifying them of Anderson's promotion to Captain effective that date. Mrs. Anderson moved into the Alex Johnson Hotel in Rapid City while her husband went about the business of establishing the tent city that was to become the "Strato Bowl." Representing the National Geographic Society there was Mr. Thomas W. McKnew, then the Assistant Secretary of the Society. A warm and

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[11] Interview, Hopper, Sept. 1943, pp. 16-17.

enduring friendship rapidly flourished between the Andersons and McKnew.[12]

The people of Rapid City enthusiastically welcomed the balloonists, and the otherwise quiet town rapidly became world famous. The Commanding Officer at nearby Fort Meade assigned a detachment of soldiers and officers to guard the camp and to set up tents for over a hundred people. Cooking and medical facilities were also established as the Strato Bowl rapidly took on the complexion of a small army on bivouac. The telephone company installed teletype machines, the Weather Bureau set up a most important forecasting station, floodlighting and the necessary generators for power were emplaced and the National Broadcasting Company began periodic broadcasts to the nation. By 20 June the camp was nearly complete. Kepner and Stevens flew from Wright Field, and Mrs. Kepner arrived by train a short time later, also staying in the local hotel. The fragile instruments were on hand, and their installation in the gondola was begun.

In order to give the soldiers from Fort Meade, who were to make up the ground-handling crew, some experience in launching balloons, a practice inflation was planned. A substitute 35,000 cubic-foot balloon, with identical rigging to that of the larger Explorer I, was inflated on the evening of 6 July with a practice flight out of the bowl made

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[12] Dr. T. W. McKnew is now the Advisory Chairman of the Board of the National Geographic Society.

at dawn the next day. The flight lasted only thirty-seven minutes, but the balloonists and the ground crew gained valuable experience and practice. Next came a test of the gondola in which Anderson, Kepner, and Stevens were sealed inside the metal sphere for six and one-half hours to test all oxygen and carbon dioxide systems. This experiment finished successfully, it remained only to christen the gondola. Dr. Gilbert Grosvenor, President of the Geographic Society, named it the "Explorer," and at a ceremonial function performed on 9 July amid the rustic conditions of the camp site, Mrs. E. Y. Berry, wife of the Governor of South Dakota, christened it with liquid oxygen.[13]

The ceremonies concluded, the waiting began for the elusive "satisfactory weather." Each day the teletype carried weather reports from all over the nation to the floor of the Bowl where they were analyzed and discussed. Too many clouds in the atmosphere would prevent the sun from heating, and thereby expanding, the gas inside the bag. These same clouds would also cool the gas too quickly on descent forcing the rapid expenditure of ballast to prevent losing altitude at too great a velocity. Because of this factor of clouds, and the ever-present problem of winds, days that appeared otherwise perfect had to be passed. Not

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[13] Major W. E. Kepner, "Report of the Commanding Officer of the N.G.S.--A.A.C. Stratosphere Flight to Chief of the Air Corps, U.S. Army," 1 August 1934, as reprinted in NGS No. 1, pp. 26-28; Captain Albert W. Stevens, "Exploring the Stratosphere," National Geographic Magazine, LXVI, No. 4 (October 1934), p. 403; letter, Kepner to author, 25 May 1970.

until the night of 26 July 1934 did the reports begin to show the type of day for which everyone had been waiting.

The long-delayed high pressure area drifted in from the west and promised that the following day or two would be almost cloudless and relatively free from winds. At noon on the 27th Kepner announced that inflation could begin, and Anderson took complete charge of all ground operations. With the decision made, the camp became a flurry of activity. The balloon was unboxed and the endless folds of material stretched out on the sawdust-padded circle. Busloads of soldiers arrived from Fort Meade, took off their shoes and waded into the cloth to toss it around and loosen any folds which might trap the hydrogen gas. A pungent rubber smell filled the warm, still air as the cavalrymen worked. Miles of handling ropes were attached to the cantenary band, while the inflation hoses were connected to the hydrogen cylinders stacked like cord wood just outside the inflation circle. Very quickly the gas created a round bulge at the top of the balloon which expanded as the 225,000 cubic feet of hydrogen flowed into the rubberized material. Slowly the long anchor ropes, looped through eyelets attached to the balloon, were let out and the balloon was allowed to rise from the ground until it floated upright in the gathering shadows of late afternoon.[14]

Apparently as a last minute decision, Captain Anderson was notified by Kepner that he was being added to the crew for the flight.

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[14] Kepner, "Report of the Commanding Officer," pp. 28-29; Stevens, "Exploring the Stratosphere," pp. 402-03.

From the beginning Stevens had planned the flight around a two-man crew, with Anderson a back-up in case of emergency. As more and more experiments were added to the task of the two crew members, it became evident to Kepner that a limit was being reached beyond which the two men would have more than they could safely handle. If any last minute requirement was added it could not be accomplished, and since Stevens was not a qualified balloon pilot, he might have difficulty in handling the big bag in case of an accident incapacitating Kepner. As early as May 1934, Kepner had begun to think about taking Anderson along on the flight, but since Stevens had strong desires for a two-man crew, the Major did not express them. During the first week of July, Kepner flew back to Washington to report to General Westover and Dr. Grosvenor that all was in readiness. Westover, a balloon pilot himself, asked Kepner then if he did not feel that a third man would be helpful. After some discussion, the decision was left to Kepner with the strong advice of Grosvenor and Westover being that Anderson should go along.[15] Actually charged with the establishment and operation of the base camp, and with being back-up pilot to Major Kepner, Anderson had openly expressed his desire to go along many times. The gondola was large enough to hold all three in addition to the instruments, and Anderson had participated in all of the testing exercises to insure his readiness in event he was needed. When he was added to the crew, late in the

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[15] Letter, Kepner to author, 25 May 1970.

afternoon of the 27th, he was unprepared to the extent that he had to call his wife and send her scurrying out to purchase a pair of long underwear before the stores closed. Word of the pending flight spread rapidly through the town and as businesses closed for the weekend and drought-plagued farmers finished chores, hundreds drove to the Strato Bowl to take up positions around the rim from which they could watch the last-minute preparations. Many brought their suppers and a few of the more hardy announced their intentions to spend the night in order to be on hand for the dawn takeoff.[16]

Excitement mounted as darkness fell and the circle of floodlights bathed the floor of the bowl in near-daylight brightness illuminating the tear-drop-shaped balloon suspended motionless above it. During the night the black and white gondola was wheeled from its shelter and fastened by ropes and straps to the balloon. At dawn, when all was in readiness, Kepner and Anderson kissed their wives and, with Stevens, walked out to the gondola. Anderson and Stevens climbed inside while Kepner stood on top to supervise the castoff. Eighty pounds of ballast were released, the final constraining ropes were dropped, and Explorer I lifted off at 5:45 A.M. The huge bag rose more rapidly than had been expected. With no previous experience in the handling of balloons of this size, Kepner and Anderson were kept busy outside

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[16] New York Times, LXXXIII (28 July 1934), p. 1. Also, interview with Mrs. Anderson, 1969.

securing equipment and lowering instruments that were to dangle beneath the gondola. Captain Stevens, still inside, was forced to set his instruments at a much more rapid rate than had been anticipated and to valve hydrogen on instructions from the two pilots outside. In thirty minutes the balloon had reached 14,500 feet forcing the accompanying chase planes to climb at near maximum rate to keep up with the Explorer.

The balloon was leveled off temporarily and Kepner finished work on the outside, ordering Anderson inside. The Major followed and the gondola was sealed and made ready for altitude. Liquid oxygen was poured into its evaporation container and the cabin, except for the lower temperatures, became reasonably comfortable.

The subject of clothing had been discussed with the experts at Wright Field during the many planning sessions. All expectations were for reasonable temperatures, but Kepner felt they should be prepared for readings as low as minus eighty degrees. Accordingly each decided upon long underwear, average weight woolen pants, cotton shirts, and the aviator's leather jacket for takeoff. In addition, each man had fleece-lined pants and jackets with hoods in case the expected temperatures were encountered (indicating a lack of the warming rays of the sun in the stratosphere).[17]

More ballast was released and the balloon resumed its ascent

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[17] Letter, Kepner to author, 25 May 1970.

to the stratosphere. Stevens remained busy monitoring the instruments and recording readings as well as setting the cameras in motion. Anderson assisted Stevens while monitoring the altimeter and rate of climb of the balloon. Kepner valved or released ballast as needed and established radio contact with the ground. He and Stevens carried on conversations with Air Corps officials and the directors of the National Geographic Society in Washington as well as announcers from various commercial stations around the nation linked to the National Broadcasting Company network. Anderson spoke briefly to his wife in the radio shack back at the Strato Bowl, but beyond that left most of the conversation to Kepner and Stevens. The publicity benefits which the Air Corps had hoped to achieve, secondary to the scientific findings, were accomplished handsomely as the aeronauts' voices poured through loudspeakers into millions of homes across the nation.[18]

The trip up was unbelievably smooth. No emergencies arose and all instruments functioned perfectly. Anderson recalled the uneventful ascent later:

> On that flight we had little or no unusual incident until we got to about 57,000 feet on the way up, and at that time--this bag was inflating all the time and opening up the fabric so that you could see more and more of it--at about 57,000

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[18] George McElrath, "The Part that Radio Played," pp. 91-93 and Karl Arnstein, "Design of the Stratosphere Balloon--'Explorer'," pp. 95-109, both articles reprinted in NGS No. 1. Also Stevens, "Exploring the Stratosphere," pp. 397-434; Kepner, "Report of the Commanding Officer," pp. 26-32.

> feet, looking up through the vertical porthole, I first observed these fairly large tears that I had never seen before. That produced a problem demanding rather immediate solution.[19]

This alarming turn of events was relayed to Washington, to the base camp in South Dakota and to the rest of the nation simultaneously by radio. At first the rips in the fabric did not seem to be too dangerous, but as the balloon rose to ever-lighter air the hydrogen expanded to greater volume forcing the sides of the huge balloon outward to an almost circular configuration. This put additional strain on the already torn fabric and gradually lengthened the tears. One rip appeared to be about thirty feet long and of triangular shape, while alongside it were three other rips of varying lengths. To allow the balloon to go the maximum planned height above 70,000 feet was now out of the question. The problem became, instead, one of avoiding the fully-inflated altitude of 65,000 feet. As he had at 40,000 feet, Anderson began to valve hydrogen to stabilize the balloon at 60,000 feet. This had been planned originally to allow for specific experiments and pictures, but took on a greater sense of urgency with the torn fabric to contend with. To the astonishment of the aeronauts, the big bag continued to rise as the superheated hydrogen carried the gondola past the planned leveling altitude and up toward certain disaster. Anderson began to valve frantically to stop the rise and at 60,613 feet the balloon leveled off, seemed to gather

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[19]Interview, Hopper, Sept. 1943, p. 18.

breath during a brief pause, and at 1:40 P.M. began its descent at a rate of between 500 and 600 feet a minute.

While Stevens carried on with the experiments and Anderson controlled the descent, Kepner attempted to answer the flood of questions that were being radioed to the gondola from individual stations, from Washington, and from the base camp. In the radio shack where they had been listening since the liftoff, Mrs. Kepner and Mrs. Anderson looked at each other in mounting fear. Just a few hours earlier, Mrs. Anderson, in an interview, had expressed her great pride in the fact that "Andy" had been allowed to go along at the last minute. "I'm not at all worried," she had said, "I'm so sure the expedition will be a success." Now, when asked if she would like to go to one of the other tents, she declined by saying that she could pray just as well standing right there and she would better be able to keep up with what was going on.[20]

Up in the gondola, Anderson was valving with one hand and controlling the ballast release with the other while he watched through the top porthole as the rips increased. Kepner was in contact with General Westover in Washington and reported to him that, "The bottom of the balloon is pretty well torn out and it is just a big hole . . . . I don't know how long she is going to hold together. But there is nothing

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[20] New York Times, LXXXIII (29 July 1934), p. 20; Interview, Mrs. Anderson, 1969.

to do about it but come down as long as we can, and come down as easy as we can." General Westover replied, "I think you are very wise to make your rate of descent very slowly." After some more technical conversation in which Westover, a veteran balloon pilot himself, carefully refrained from giving advice to Kepner, the General ended the conversation heard throughout the nation with "We are hoping you have a happy, safe landing."[21]

While the rips in the fabric gradually lengthened they stayed below the critical catenary band. The balloon seemed to stabilize itself during the descent and the crewmen felt increasingly confident that it would be possible to ride the torn bag down. The first objective was 40,000 feet. That reached with a major part of the envelope intact, Anderson suggested, and Kepner agreed, that the gondola be kept sealed until they reached 30,000 feet. The lower they got with the bag still holding hydrogen, the greater was the chance of landing safely and saving the valuable instruments. At 20,000 feet Kepner ordered the manhole and emergency doors opened. There was enough liquid oxygen remaining inside the gondola to permit a quick gulp of almost pure oxygen if needed. The opened doors allowed a closer inspection of the bag which had now begun, as Anderson described it, to "breathe." As it alternately expanded and contracted, the strain on the fabric caused the lower portion of the bag below the catenary band which held the ropes

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[21] New York Times, LXXXIII (28 July 1934), p. 1.

that ran to the gondola to rip off and fall down the load-carrying hawsers onto the top of the gondola. Anderson climbed out and began to cut away the fabric, almost an acre of it, with a rigger's knife, throwing the pieces overboard. The "breathing" process had torn away all of the thinner bottom part of the bag in which the initial tears had been observed. Remaining was the top half of the envelope, now open to the air at the bottom but still full of rapidly-cooling hydrogen gas and acting much like a parachute to the gondola suspended beneath it.

Anderson was for staying with the damaged balloon, but after cutting away the spectograph which had hung beneath the gondola, Kepner decided it was safer to abandon the Explorer. Stevens gave the final altitude reading at 5000 feet and strapped on his parachute. Kepner, by prearrangement climbed out on top of the gondola, and Anderson started to follow him, only to discover that Stevens had inadvertently caught his foot in the pull ring of Anderson's parachute and popped it open. The life-saving white silk now lay in a crumpled heap at his feet. Undaunted, he picked up the cloth folds, and climbed out of the gondola. There he gathered the silk to his chest and calmly fell backward off the gondola at close to 2800 feet. Just as he did so, the remaining hydrogen trapped in the torn envelope above him exploded. Stevens, still inside the gondola, found himself unable to get out of the manhole on the first try as the sphere began to spin crazily and pick

up speed in its almost-unhindered fall. On his second try he dived through the opening only to find that his speed in falling exactly matched that of the gondola. He ripped open his parachute, which billowed above him, but huge pieces of the balloon cloth fell on top of the silk threatening to collapse it. Fortunately they quickly slid off and Stevens looked down in time to see Kepner's parachute open at close to 500 feet. Almost immediately the gondola smashed into the drought-parched earth on the farm of Reuben Johnson, four miles north of Loomis, Nebraska. It was 3:40 P.M.--the flight had lasted ten hours and thirty-five minutes and ended in near disaster.[22]

Across the nation, radio listeners joined those at the Strato Bowl, in waiting out the silence from the gondola. There was no doubt in anyone's mind that the balloon had crashed. The fate of the three crewmen, whom the nation had learned to know that July morning, was still in doubt and for news of them they waited without stirring from their radio sets. They breathed a collective sigh of relief as Kepner's call to the nearest military authorities was relayed to the Strato Bowl camp and from there to the listening nation. The three had landed safely close by the stricken balloon, had dashed to it, barely beating the gathering crowd of souvenir hunters who had watched the balloon's descent from miles away across the level plains. While Kepner telephoned,

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[22] Kepner, "Report of the Commanding Officer," pp. 30-31; Stevens, "Exploring the Stratosphere," pp. 415-17, 425; interview, Hopper, Sept. 1943, pp. 19-22.

Anderson and Stevens stayed with the flattened gondola to protect what was left.

The three men, in the world's largest balloon, had soared to an altitude just 624 feet below the record set earlier by Settle and Fordney. A bit more than two balloon lengths remained between them and the world's record. Instead, at their feet lay the gondola ". . . squashed like an eggshell." The largest piece was barely four feet square. Of the instruments inside hardly anything remained, but the barograph was sufficiently intact to record the exact height reached as 60,613 feet. Disappointing as it was to fail, it was encouraging to realize that none of the instruments or the gondola had failed at a crucial time. For a never-explained reason, an eighty-foot parachute attached to the side of the sphere, and designed for just such an emergency, was never used. All was not lost for much valuable experience in the handling of larger balloons had been gained. Build a better, stronger balloon and man could go higher with greater safety. This Goodyear-Zeppelin set about doing, and the Air Corps/National Geographic expedition, planned for two and possibly three flights, was on again.

A New York Times editorial soon after the flight summed up the feelings of the nation despite the failure. "Never was there drama like this . . ." the writer began. It was not luck that saved the men, the editorial went on to say, but experience, and this fact vindicated the Air Corps' selection of the three men showing not only "soundness

of judgment but the quality of its officers." The same curiosity that led men like Columbus to venture across the seas sent these men above 60,000 feet. "As Kepner, Anderson and Stevens have proved, the satisfaction of scientific curiosity still calls for the physical courage and the fiber that we associate with true argonauts."[23]

Almost immediately after the crash of the Explorer I, a Board of Review was appointed to investigate the cause of the accident. The balloon had cost less than $60,000 for the envelope, the gondola, and the instruments. Much of the equipment had been donated or furnished at cost, and most of the expense was borne by the National Geographic Society. The entire apparatus was insured by Lloyds of London. It therefore became very important to determine the exact cause of the failure.[24] Dr. Lyman J. Briggs was the Chairman of the investigating group, with Dr. John O. LaGorce representing the National Geographic, Brigadier General Oscar Westover, Acting Chief of the Air Corps, as well as Drs. W. F. G. Swann and L. B. Tuckerman. The Board's report, filed less than a month later, found that there had been no negligence on the part of the three crewmen. The rips in the balloon envelope were due initially to improper packing which allowed the thin fabric to stick together in such a way that stress, above the level of

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[23] New York Times, LXXXIII (30 July 1934), p. 12.

[24] Stevens, "Exploring the Stratosphere," p. 433.

tolerance, was placed on the thinnest sections of the material. Once this was ripped away during the descent, the final explosion was caused by a spark of static electricity igniting the highly volitile hydrogen-oxygen mixture still in the parachute-like remnant of the balloon. On the basis of this finding the insurance company paid close to $40,000.00. It was enough, along with some additional contributions from individuals, to build another balloon for the second flight.[25]

The volume of the second balloon was increased to 3.7 million cubic feet, and helium was ordered as the lifting agent instead of the more volitile hydrogen. Dowmetal again built the gondola, this time nine feet in diameter. Despite its increase in size, refinements in the design allowed it to actually weigh less than the previous one. Official orders were received detailing Major Kepner to the Air Corps Tactical School at Maxwell Field, Alabama, and, since such an excellent opportunity came along all too infrequently in the prewar Air Corps, Kepner elected to accept them and retire from the Explorer II crew.[26] Anderson's name was also on the orders, but his desire to reach the stratosphere was greater than that for the schooling, so he remained at Kelly

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[25] The Report was filed 17 September 1934, "Report of the Joint Board of Review." Archives 168.7006-60 also reprinted in NGS No. 1, pp. 71-82; interview, Hopper, Sept. 1943, p. 22.

[26] General Douglas MacArthur, Army Chief of Staff, paid Kepner the compliment of sending General Westover out to the Bowl to talk with him to be sure he "was getting a fair deal, and wanted the school. . ." which he did. Letter, Kepner to author, 25 May 1970.

awaiting the summons to return to the Strato Bowl. Captain Stevens, being the ranking officer, now became the commanding officer, and Anderson the pilot. Only two crewmen were planned for the second trip, but Captain Randolph P. Williams, also of the Army Air Corps, was designated as alternate pilot or observer, the job Anderson had previously held. Due to his previous experience, he was also placed in charge of organizing the weather bureau station. Dr. Briggs continued to head the scientific committee, and Mr. McKnew was once again the National Geographic's senior man at the Bowl.

The balloon was completed in Akron, Ohio, and shipped to Rapid City, the rubberized fabric treated this time with a white, powdery substance to prevent the folds from adhering to each other. The gondola was finished in Midland, Michigan, arriving at the Strato Bowl in the middle of May. The tent city which had marked the floor of the bowl during the preparations for Explorer I was set up once again under Captain Williams' direction, and all was in order by mid-May. The flight was scheduled for June 1935.

Weather is no respecter of schedule and, in this case, no day suitable for a launch developed during the entire month. In their free time, the Andersons renewed their many acquaintances in the Rapid City area. Captain "Andy" was well liked and his cheerful, outgoing personality had been discovered early by many of the local people in the area. While squeezing in an occasional fishing trip, Anderson kept

close tabs on the developing weather and was among the first to see the favorable weather reports begin to arrive at the Bowl on 10 July. Inflation was started on 11 July and proceeded with remarkable smoothness throughout the night. At 3:00 A.M. the following morning, as nearly 50,000 people watched from the rim of the Bowl, the white, flood-lighted bag suddenly deflated and collapsed on top of the gondola and three men working on top of it. The men escaped suffocation in the folds of cloth, but operations came to a complete standstill. A search began for the cause of the explosion just as soon as it was light enough to see the material clearly. The ripped area centered around the vent valve in the top of the balloon and proved to be of sufficient complexity that field repairs had to be abandoned. The waiting crowd was informed by loudspeaker and reluctantly turned to their cars and the trip home. Below on the floor of the Bowl, the bag was refolded, placed in its box, and prepared for shipment back to Goodyear-Zeppelin. The prospect of another attempted flight in 1935 seemed very remote and an air of gloom and discouragement pervaded the camp as personnel packed once again and headed back to their regularly assigned stations. Stevens returned to Wright Field and to Akron, while the Andersons headed back to Kelly Field, Texas.

At the Goodyear-Zeppelin plant a thorough analysis was undertaken of the fabric surrounding the rip-panel in the top of the balloon. No fault could be found with the material itself, so a new rip-panel was

designed incorporating the suggestions of Stevens and Anderson who had flown to Akron to assist in the investigation. A new ripping device, designed by Anderson to permit the entire top of the balloon to be ripped open when a thin steel cable was yanked, was fabricated and installed. This feature proved its worth when the gondola touched earth at the end of the second flight. At that time Anderson ripped open the bag and the gondola, with its delicate instruments, was not dragged across the ground. Repairs and modifications having been made by September 1935, the bag was once again crated and shipped to the Strato Bowl.[27]

The crew, scientists, their families, and the military detail were reassembled and the Strato Bowl camp established a third time. By the first day of October the camp was ready to launch the repaired balloon. Once again the long wait for the right weather conditions began, this time with the added handicap of temperatures that dropped at times to six below zero and snowstorms that kept the ground crew busy clearing the launch area. Anderson spent most of his time at the launch site with Stevens, Mr. McKnew, and Captain Williams. Mrs. Anderson stayed in the Alex Johnson Hotel in Rapid City, and quickly resumed an active part in the city's social activities. The city had adopted the whole

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[27] Captain Albert W. Stevens, "Report of the Commanding Officer of the N.G.S-A.A.C. Stratosphere Flight of 1935 to the Chief of the Air Corps, U.S. Army," National Geographic Society--U.S. Army Air Corps Stratosphere Flight of 1935 in the Balloon 'Explorer II.' (Washington D.C., Natl. Geog. Society, 1936), pp. 160-61. Hereafter referred to as NGS No. 2.

stratosphere project as its own, and every cooperation possible was afforded by the people of the area. There was a real warmth and friendliness afforded the Andersons--one that lasted long after the fame of the Explorers had passed.[28]

By the first week of November the weather began to improve. As reports came in it appeared to Captain Williams that the best time for a flight would be on 10-11 November. Preparations for the inflation of the huge bag were begun on the morning of 10 November. The envelope was removed from its air-sealed crate and despite the thirteen degree cold, the inflation proceeded without incident. The fabric became appreciably stiffer in the cold air and Anderson watched with concern as the gas was released into the cloth folds. Barely 20,000 cubic feet of helium had flowed from the cylinders into the balloon when a muffled noise from the folds of cloth indicated another explosion somewhere beneath the already-bulging top of the bag. The helium was shut off and a search begun for the torn section. It took an hour to discover the spot where the helium, trapped in the stiff fabric, had placed too great a stress on one section and caused a seventeen-foot rip. On-the-spot repairs, while possible, carried an element of risk with them since the rubber cement used would not have an adequate opportunity to cure

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[28] General Anderson's correspondence files are filled with letters from South Dakota friends who constantly invited them both to return for a hunting or fishing trip. The Andersons did return several times thereafter. Archives 168.7006-1.

properly prior to launch. Several of the people present recommended scrubbing the flight once more, but Anderson would not accept cancellation without a thorough try. The rip was just below the "equator" of the bag (the lower half of the balloon) a place where the stress on the material was not great until the bag was fully inflated at close to 60,000 feet. Anderson grabbed his repair crew and dashed into the folds of the balloon. Army personnel held up the material all around them to form a smooth surface for the repair and to give some protection from the cold during the crucial work. With a roll of fabric, a can of rubber cement, and two 500-watt light bulbs to warm the cement while it dried, the repair crew completed their work in an hour. The delay put the inflation schedule two hours behind, so take-off time slipped to 7:00 A.M.[29]

To compensate for a slight wind that had arisen during the delay, the Explorer II was ground-walked to one side of the Strato Bowl. There the balloon was balanced off and the signal given to the maneuvering crew to release the ropes holding the 15,000-pound balloon. The band struck up the National Anthem and thousands of chilled people who rimmed the bowl watched breathlessly as the silver-colored bag rose rapidly from its protective bowl. The gondola cleared the rim of the bowl by an ample margin. As the crowd cheered, Explorer II appeared

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[29] Major General Orvil A. Anderson, "Ballooning in the Stratosphere," Airpower Historian, IV, No. 1 (January 1957), pp. 12-13.

well on its way when a sudden wind current hit the top of the bag and began forcing it down. Anderson rapidly discharged over 800 pounds of lead ballast in the form of tiny pellets which rained down upon the upturned faces below. An eyewitness to the launching later wrote Anderson that he heard the explosive charges that were fired to release the ballast, was hit by some of the falling pellets, and he boasted a bit by saying that the balloon came so close "he could have hit it with a baseball."[30]

The ballast release was sufficient to check the descent of Explorer II and to allow it to resume its rise. The danger, and, as it turned out, the only problem of consequence on the entire trip, was past. The nearly 20,000 people who had braved zero temperatures to drive many miles to the Bowl, and stand for hours during the inflation, were more than repaid by the stirring sight. Those who were struck by the falling lead pellets felt themselves singularly honored and the buckshot was a prize souvenir of an otherwise raw, cold morning. Once the balloon was back on its course, people dashed for their cars and thermos bottles of hot coffee. Some attempted to follow the balloon by automobile, others returned to the traditional Armistice Day football games or simply to their homes where they sat close to their radios. For the people in the Rapid City area it was, as one woman described it, a "thrill day."

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[30] Letter, Mr. C. C. Curran of Lead, South Dakota to Anderson, 11 November 1935, Archives 168.7006-10.

Anderson had remained outside the gondola during take-off, the emergency, and continued to remain there to lower and secure the instruments. Then he climbed inside until, at 16,500 feet, he valved the balloon to a stop for a final outside inspection after which he climbed inside and sealed up the manholes. Liquid oxygen was released inside and the gondola checked for pressurization. With everything satisfactory, ballast was released and Explorer II was allowed to continue its rise, not stopping at the 60,000-foot mark as planned but, because of the earlier delay in the launch, going right on to the altitude mark. This time the bag unfolded smoothly and at 65,000 feet was fully inflated, assuming a nearly round shape. More ballast was dropped and the balloon rose to an indicated altitude of 73,000 feet. At that point the balloon was capable of going higher by the discharge of more ballast, but a considerable amount of the lead pellets would be needed to control the descent and Anderson elected to take no chances. The balloon had risen at about 600 feet per minute, very steadily, since it took off. Stevens had been fully occupied with exposing samples of spores, charting infrared and cosmic radiation, collecting air samples for analysis, and talking on the NBC radio network to Washington, D. C., New York, and London. He left the radio as rapidly as possible, preferring to pass that sort of thing to Anderson. At a point nearly ten miles above the earth, Anderson began a conversation with his wife who was standing by in the NBC radio hut at the Strato Bowl. Lacking anything in

particular to say, Mrs. Anderson asked the usual question, "How is everything? Where are you now?" From above came the reply, "Very good, Muddy."[31] Again she tried to carry on the conversation, "Where are you?" she asked. It was an opportunity too good to pass up and, over the international network, Anderson replied dryly, "I'm up in the air!" He then added that their altitude, to which Mrs. Anderson had referred, was 54,000 feet and they were on their way to the ceiling. "Fine, and best of luck!" came back Mrs. Anderson. A short while later the two balloonists listened in on instructions not intended for their ears, given by an eastern announcer to his fellow craftsmen:

> Don't play up this record [altitude record] business, boys, until we are sure that they have gotten down safely. There is still plenty of chance for them to crash and they have to come down alive to make it a record.[32]

While Anderson described to the nation below the intensity of the sun's brightness above the earth's haze, the blackness of the sky above and the vivid blue of the horizon, Stevens took man's first picture showing the division between the troposphere and the stratosphere and clearly demonstrating the curvature of the earth. He snapped the shutter at the Explorer's maximum height, 72,395 feet at 10:50 A.M. The balloon

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[31] Mrs. Anderson acquired the nickname "Muddy" from a poem written by a girlfriend in honor of her engagement to Anderson in 1919. An adaptation of her name, Maude, the nickname caught on immediately and has endured.

[32] Captain Albert W. Stevens, "Man's Farthest Aloft," National Geographic Magazine, LXIX (January 1936), pp. 59-94; interview with Mrs. Anderson, 1969; New York Times, LXXXV (12 November 1935), p.4.

remained at or near that altitude for an hour and a half before Anderson began to valve off the heated helium and allow the balloon to descend.

The flight up had been uneventful with the exception of the near-miss of the rim of the Strato Bowl. Now came the crucial period, the safe return of the crew and instruments to the ground. Anderson kept one hand on the balloon's gas valve while maintaining radio contact. Stevens continued to conduct the numerous experiments for which the expedition was designed. About an hour before they landed the two balloonists talked with the crew of the China Clipper flying boat en route over the Pacific between San Diego and San Francisco. A conversation with a news reporter in London concerning the earlier rip in the bag had to be abruptly terminated due to the rapid descent rate, and it left listeners laughing as the London newsman received the impression that the rip had occurred during the flight, and that the two crewmen had climbed out of the gondola at 72,000 feet and put a patch on it. When the two aeronauts were too busy to talk, the microphone was left open. Through it came the steady clicking sound of the Geiger counters inside the gondola as well as the muffled conversation and grunts of physical exertion of the two men as they heaved expended batteries overboard to save ballast near the end of the trip. During this period, the NBC announcers talked with the pilots of the two chase planes continually circling the descending balloon. Without regard for the many other results accomplished by the flight of Explorer II, it had been a great

day for radio, a science still very much in its infancy at that time.[33]

The balloon began its descent at a rate of about 300 feet per minute. As Anderson valved more helium, and the temperature of the gas decreased somewhat, the speed picked up to 500 and then 700 feet before, by the release of the ballast, the rate was checked and Anderson was able to slow down the balloon to a steadier fall. The gondola ports were opened at 16,000 feet and since the flat farmland over which the balloon was passing seemed satisfactory for a landing, more gas was valved to increase the rate of descent. As the balloon neared the ground, Anderson and Stevens put on football helmets which they had borrowed from a Rapid City high school team for protection from the sharp edges of the instruments. For the sake of those delicate devices Anderson had to land the balloon with the least amount of shock possible. The rapid descent checked, the 315-foot craft floated slowly over the South Dakota farms at about 100 feet, a sight which brought hundreds of cars racing down dirt roads in pursuit. Anderson dropped an anchor rope to the people below the gondola, but they were so interested in watching the termination of the flight that they did not grab hold and check the balloon's drift as he had intended. There was nothing to do but let the bag settle of its own accord, which it did on a farm south of White Lake, South Dakota, at 3:14 P.M., eight hours and thirteen

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[33] Stevens, "Man's Farthest Aloft," p. 208; New York Times, 12 November 1935, p. 2.

minutes after take-off. Just as the gondola touched the ground, Anderson yanked the steel cable ripping open the top of the bag. The fabric collapsed in a heap without dragging the gondola an inch. Explorer II rolled gently over on its side and came to a rest. Mr. Thomas McKnew had followed the balloon in a chase plane and landed in the same pasture in which the balloon came to rest. He ran over to the gondola in time to greet the two balloonists as they climbed out, possessors of man's highest altitude record, a mark that would stand for almost twenty-two years.[34]

The crewmen were surrounded by well-wishers from the local area as well as the inevitable souvenir hunters. Soldiers arrived in short order to protect both the balloon and the gondola while the tired, but very pleased, aeronauts were driven into the nearby small town of Kimball where they spent the night. After a call to his wife and a hot bath, Anderson sat down to a big steak. Interviewed while he ate, the now-famous pilot recounted the important features of the flight and then added in a rare burst of almost childish enthusiasm, "Boy, I sure got a kick out of being at the top of the world." "And I should know," he continued, "this is my third attempt to get there."[35] Without doubt it was one of Anderson's proudest moments. After two failures, one of which nearly culminated in tragedy, he had ridden the biggest to the

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[34] Letter, Dr. T. J. McKnew to author, 28 March 1969.

[35] New York Times, LXXXIII (30 July 1934), p. 12.

highest. Throughout the remainder of his life, he would continue to be known as the pilot of the stratosphere balloon, Explorer II. It was an accolade which he never tired of acknowledging.

CHAPTER III

THE PREPARATION YEARS

The year 1935 was a spectacular one in many respects. In Ethiopia, Italy was having a surprisingly tough time in conquering territory from a previously little-regarded army of the Lion of Judah. In Paris, Colonel Alfred Dreyfus, principal figure in a scandal that shook the French army to its foundations, died in July. A severe drought had turned sections of the Midwest and West into parched deserts and a summer heat wave had killed 1361 people by late July with not much early relief in sight. The notorious John Dillinger, number one on the FBI's most wanted list, was gunned down outside a Chicago theater. President Roosevelt made his first trip as President to the island of Hawaii, while back home Acting Secretary of War, Harry H. Woodring, and Army Chief of Staff, General Douglas MacArthur, pledged an Army Air Corps second-to-none within two years. The so-called Baker Board, convened to look into the claims of the Air Corps for autonomy, recommended instead that 2320 more planes be purchased. This was only half a loaf, but it was better than none. The Air Corps had

achieved the desired publicity from the stratosphere flight in November and the fallout from that event appeared likely to garner newspaper space for some time to come.

On the morning after the flight, Captain Anderson spoke again with hundreds of reporters gathered at Kimball, South Dakota, near the landing site of the record-breaking Explorer II. "The flight itself was fine," he said, "but the waiting for satisfactory weather was hell." Beyond the sudden downdraft at the beginning of the flight, Anderson related, there were no other events of note on the entire trip.[1] Along with Stevens he ate a leisurely breakfast early in the morning and then drove out to the landing site to assist in the packing of the gondola and the balloon. This work completed, the two now-famous aeronauts and other members of the official party boarded a train for Chicago where they were to join members of the expedition who were departing the base camp at the Strato Bowl. The two groups met the next morning and the Andersons led them to breakfast before they all proceeded on to Washington, D.C. Upon arrival in the capital, hundreds of telegrams were delivered to them among which was a cablegram to Stevens from Lieutenant Commander Settle, the previous balloon altitude record holder, which read, "Heartiest congratulations to you and Andy on your splendid hop, signed Tex."[2]

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[1] New York Times, LXXXV (13 November 1935), p. 2.

[2] Settle was stationed on the destroyer USS Whipple in the Yangtze River of China at the time.

Of greatest immediate importance was a visit by Anderson and Stevens to the White House three days after their historic flight, for a brief meeting with President Roosevelt. Accompanying the two flyers was General Malin Craig, Chief of Staff of the Army, and Brigadier General Oscar Westover, Acting Chief of the Army Air Corps. President Roosevelt expressed great interest in the pictures taken by Stevens and congratulated both of the men on their accomplishment. Anderson came away from the meeting with a great respect for the President as a person, if not for all of his political policies. General Craig, in an earlier letter of commendation to Anderson, emphasized the technical aspects of the planning and execution of the expedition:

> Your flight was characterized by perfection of planning and thoroughness of preparation, as well as a display of confidence and sound judgment. Your matchless courage to dare the unknown heights of the stratosphere in a pioneering achievement, such as this, is no less admired than your remarkable skill in accomplishing a perfect landing with this enormous balloon. There is no record of a more perfect execution, from beginning to end, of a pioneering balloon flight that can compare with the performance accomplished by you as pilot.[3]

There were many awards yet to come, but the words of the Chief of Staff followed by a visit with the President, were a high point of the many received.

To the Distinguished Flying Cross he had won for the flight of Explorer I, Anderson now added an Oak Leaf Cluster in lieu of another

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[3] The letter was dated 12 November 1935. File "Awards, Commendations and Decorations," Archives 168.7006-5.

Cross. The French Federation Aeronautique Internationale awarded him the Prix de Henry de la Vaulx for having set the world's altitude record. At Constitution Hall in Washington, D.C. on 12 December 1935, General of the Armies John J. Pershing presented the National Geographic Society's Hubbard Gold Medal to Anderson and Stevens for the flight. The two balloonists thereby joined a very select company of pioneers and explorers that included such "greats" as Lindbergh, Admiral R. E. Byrd, and, more recently, astronauts John Glenn, Apollo 8's Frank Borman, John Lovell, and William Anders as well as Apollo 11's team of Neil Armstrong, Edwin Aldrin, Jr., and Michael Collins. An especially welcome award was the Franklin L. Burr prize of $2000.00 presented by the Trustees of the National Geographic Society.

And still the awards came to the two balloonists. In January 1936 an appearance at the prestigious Explorer's Club dinner in New York, gave Anderson an opportunity to repeat what he had said many times since the successful landing of Explorer II. Namely, that given the opportunity, the balloon and gondola were capable of going at least another 5000 feet higher. Both men stated they were ready to try it at any time, but the expense of the venture was such that no takers were available. Both men wrote articles for the National Geographic Magazine, with Stevens' being the one published. This was an ironic twist for Anderson spent his days of retirement primarily in editing and writing a magazine on Air Force history, while Stevens, after writing

articles on the flights of both Explorer I and II, wrote very little. Both men had returned to their duty stations, Stevens to Wright Field and Anderson to Kelly where he taught aerodynamics while flying with the 43d Pursuit Squadron, but the announcement of each new award would be an occasion for them to fly to the presentation ceremony. The Harmon trophy for 1935 in ballooning went to Anderson in April 1936, the Mackay Trophy, already won twice by Brigadier General H. H. Arnold, and once before by Stevens, was presented to them both in June.

During the previous month of May, Anderson had been awarded an honorary Doctorate of Engineering by the South Dakota School of Mines and Technology in Rapid City. The awarding of this degree not only honored him for his achievement, but for the tenacity of purpose with which he had pursued his own education after he left Brigham Young and was evidence of the high esteem accorded him by the citizens of the community in which the university was located. The nearby Shoshone Indian tribe made him an honorary member, and Anderson walked off with the war bonnet used in the ceremony under the mistaken impression that it was his. The irate Chief of the tribe threatened a lawsuit unless the new member returned the feathers immediately. Andy did so post-haste, along with the cap and gown which he had failed to return after the awarding of his honorary degree.[4]

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[4] Letter, 19 June 1936, File "Personal Correspondence," Archives, 168.7006-1.

In mid-February of 1936, Anderson received orders sending him to Maxwell Field, Alabama, for the next class of the Air Corps Tactical School scheduled to begin in September. Meanwhile, another set of orders dated twelve days later, placed him on two months leave to allow him to accept the many offers to speak before universities and clubs that had been pouring in. To handle all the requests the speaker's bureau of Ernest Briggs was engaged. Despite the leaves which began on 5 March, it was still impossible to accept all the requests for speaking engagements and still have any free time at all. Very often, Anderson would maintain his flying proficiency and build up the required hours by flying to some speaking engagement, generally in the southern part of the nation. It was here that Anderson began to develop fully the ability to hold an audience spellbound while speaking. His resonant voice, his excellent command of the English language, and his ruggedly masculine but easygoing platform manner, made him an instant hit wherever he spoke. Nor was he stinting with his time in accepting invitations; whether for money or simply to the local Rotary or Kiwanis clubs, he told and retold the fascinating story of Explorer II. Initially he spoke from notes, but he soon abandoned this practice and thereafter, even when he gave major speeches as a commanding general, he never used notes. At this point in his speaking career, his subject was the balloon ascension. After World War II that would be replaced by far more serious and far-reaching topics. Whatever and wherever it was, Anderson had something

to say, sometimes more than he should, but always worth the time of the listeners.

Not only was his speaking ability sought after, but his autograph was desirable as well. On the maiden voyage of the German dirigible, von Hindenburg, bureau manager Briggs made sure that a card, autographed "Best Wishes to the LZ-129 on her first voyage," was prominently displayed. There was no question in the minds of the passengers on that 1 April 1936 flight who "O. A. Anderson" was and what he had accomplished.[5] Captain Stevens, also under a speaking bureau manager, took engagements throughout the northern and eastern part of the nation while Anderson took the rest. It was a busy spring for both of them, and it took its toll in narrow escapes for Anderson.

After a speaking engagement and business stop in Washington on 17 March 1936, Anderson departed for Kelly the next afternoon, flying a single-seated P-12 fighter. At the time of his departure the weather forecast indicated only light snow over the Allegheny Mountains. By the time he reached the area of the mountains, however, the snow was heavier and icing developed. For thirty minutes he used up precious fuel trying to find a visual route over the mountains. Radio reports indicated clearing conditions at 5000 feet but at that altitude he was still "in the soup." He pushed the P-12 up to 7500 feet where ice

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[5] File, "Folder on Stratosphere Flight 1936-39," Archives, 168.7006-10.

began forming on the wings. Heading south from the Pittsburgh area, he let down again to lose the ice, but ran into a mixture of rain and snow. By 4:00 P.M. the weather was all snow, and ice was forming in sufficient quantities to slow the fighter from 120 miles per hour to just over 55 mph. The rest of the plane's instruments were in operating condition despite the ice, so Anderson headed west toward Kelly. At this point his engine sputtered and threatened to quit completely. He turned the fuel switch to the main tank and this seemed to rectify the situation until he passed the highest of the mountains. Once again the engine sputtered and could muster nothing more than idle power. An immediate letdown was the only recourse and Anderson nosed the little fighter down into the clouds. He broke out of the overcast at about 100 feet in a "moderate" snow storm. He crash-landed on the side of a hill near Grafton, West Virginia, doing extensive damage to the airplane but coming through personally unharmed.[6]

As soon as he could get to a telephone, Anderson wired his wife who was expecting him for a dinner party they were hosting that evening, stating tersely, "Forced landing, pilot fared much better than the plane. Waiting orders. Andy."[7] The next day Anderson contracted

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[6] File, "Flights and Landings, Accident Reports," Archives 168.7006-35.

[7] File, "Congratulatory Telegrams Concerning Stratosphere Flight," Archives 168.7006-10.

with a local farmer to haul the damaged plane to the rail station where it was shipped to Wright Field, Ohio, for repair, while he proceeded to Kelly by train.

The best way the Army Air Corps had of forecasting the local weather for student flying was to send a plane aloft early in the morning and actually survey the conditions. It was this situation that involved Anderson in his third airplane accident. On Sunday morning, 28 June 1936, Anderson was detailed to survey the weather in the vicinity of Kelly Field prior to student flying. Earlier reports had indicated clear weather at lower altitudes, but clouds at higher altitudes. To reconnoiter this Anderson took an observation O-25A airplane on the mission. As he came down out of the clouds the plane's single engine quit. By careful piloting Anderson felt he could glide to the base, but the plane's lift deserted him over a cornfield about two miles south of Kelly. The plane nosed over after the dead-stick landing, wrecking the landing gear, the propeller, and the leading edge of the lower wing. Once again Anderson's "protective angel" was with him and he crawled out unscathed. The subsequent investigation determined that the accident was due to mechanical malfunction and was not the fault of the pilot.[8]

On the first of July Anderson was transferred from the 43d Pursuit Squadron at Kelly to the 40th Attack Squadron stationed at the

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[8] Files, "Press and Miscellaneous Clippings," Archives 168.7006-28 and "Flight Surgeon's Records," Archives 168.7006-16.

same base. The change of assignment was a customary one to familiarize pilots with a variety of aircraft. Getting accustomed to the new plane, plus the continuing demand for speaking engagements, left Anderson little time for relaxation and study of the characteristics of the D model of the P-12. This worked to his detriment when, upon landing the plane after one of his first-check rides, he crashed into a landing light on the field. There was considerable damage to the underside of the lower starboard wing--damage attrituted entirely to Captain Anderson as pilot error.[9]

A rest was not long in coming, for on 7 July Anderson was admitted to the hospital for a tonsillectomy. After a short stay in the hospital, he was assigned to his quarters for recuperation which gave him the chance to get some much-needed relaxation. It was, in retrospect, a turning point in Captain Anderson's career. Already under orders to report to Maxwell Field in August for the 1936-37 class of the Air Corps Tactical School, this assignment to Kelly was to end the "troop duty" phase of his military years. After eighteen years of flying in both lighter-than-air and airplanes, it was time for the academic portion of his career. Up to this point his assignments had been typical of most Army Air Corps officers except for the lighter-than-air parts and the famous stratosphere ascent. There had been ample experience

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[9] File, "Individual Flight Record," Archives 168.7006-5.

gained from the many squadron assignments, and now it was time to pause, attend several schools, and prepare himself for the coming staff duties. Already, Anderson was worried that his activities with the stratosphere project might have jeopardized his chances of attending the career-essential Command and General Staff School at Fort Leavenworth, Kansas. So far as the Air Corps was concerned, the Air Corps Tactical School (ACTS) was first on the agenda, so it was for this pleasant assignment that the Andersons departed Kelly in late July, headed for Alabama.

The Air Corps Tactical School was established in 1920, along with recognition of the Air Service as a combat arm of the Army. Located initially at Langley Field, Virginia, it was moved to Maxwell in 1931. The highest educational establishment in the Air Corps at that time, its mission was to train officers in the strategy, tactics, and techniques of air power. The school adopted the motto, Proficimus More Irretenti (We Make Progress Unhindered by Custom), and through the combined actions of its faculty and students, rapidly became the center of air power thought for the United States. Its far-reaching effects upon Anderson and the Air Corps merit some historical attention at this point.

The salient fact about ACTS was the lack of past doctrine upon which to base instruction. The airplane was barely thirty-three years old when Captain Anderson arrived at Maxwell Field, Alabama, to

enter the Class of 1936-37. Many of those years had been spent simply in perfecting the flyability of the machine. Not until midway in World War I was aerial combat attempted, and, while its techniques were perfected rapidly the war ended before the air arm could play anything approaching a decisive role. Since the end of the war, technology had gradually improved the capabilities of the flying machine to the point that it had become a seriously regarded weapon of combat, capable of inflicting serious casualties. Nevertheless, the airplane was still limited to an aerial defense or a ground-naval support role rather than one of independent offensive.

At this point in time, usually considered to be after the Lindbergh flight and the sudden surge of interest in flying in the late 1920s, officers of the Air Corps realized that there were no set standards by which they could employ this new weapon in battle. As the aircraft industry met almost every criteria the Air Corps could give it for airplane performance, the question rapidly became one of, how does the airplane best serve the United States, as an offensive or defensive weapon?

The Congress, and the general public, supplied the official answer to this question readily enough. The nation, sick of war and embarked upon the relatively carefree isolationist days of the 1920s and 1930s, felt that the airplane should be used to protect the shores of the United States. Accordingly, General MacArthur assigned this defensive role to the rapidly-improving bombers. The debut of the B-17

in 1935 intensified debate at the Tactical School on the proper use of such an advanced, long-range bomber. As early as 1926 personnel of the ACTS saw the need to use bombardment in the offensive role of destroying enemy airdromes and grounded planes, thereby gaining aerial supremacy. By this action, planners hoped to forestall any such land stalemate as had existed in the last war. In 1933 the school's curriculum was rewritten and Major Donald Wilson, reasoning that there were lucrative targets of a more specific type within an enemy's borders, suggested a new line of thought. Attack specific, carefully selected industrial targets whose destruction would disrupt the entire economy of a nation and affect drastically its ability to wage war. Using railroads as an example, he reasoned that the destruction of a few vital links of a rail system would immobilize all of it. If this were true of the railroads, why was it not true of a nation's economy as well?[10]

To achieve an unqualified answer to the question required two things. First, an airplane of sufficient range and bomb capacity to enable it to reach vital enemy industrial centers, and, secondly, a theory of employment which would properly utilize the desired bomber once it was delivered. As the B-9 and B-10 all-metal bombers arrived in the early thirties, bombardment officers saw the realization of the

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[10] USAF Historical Study No. 100, History of the Air Corps Tactical School, 1920-1940 (Maxwell AFB, Ala., 1955), pp. 30-32; USAF Historical Study No. 89, Development of Air Doctrine in the Army Air Arm 1917-1941 (Maxwell AFB, Ala., 1955), pp. 90-91.

theory they had expounded about to take place. As already mentioned, in 1935 the first B-17 made theory a reality, even if untested in combat. As for the second criteria, a means had to be found to circumvent the War Department directives which limited the bomber to the defense of the coastline of the United States. As a result of the provocative possibilities of long-range bombardment aircraft that could fly faster than the best fighter built at the time, air doctrine became two-faced. Openly and officially it subscribed to long-range bombers to defend the nation's coastline, while unofficially in Air Corps Tactical School classes and in simulated exercises the offensive doctrine of high altitude, daylight precision bombardment was worked out in great, but untested, detail. To confirm the airmen's thoughts on the validity of selected targets, the United States suffered an almost complete shutdown of aircraft manufacturing due to the lack of a particular metal spring which was essential to all variable pitch propellers. The impact of this small, but vital, industrial shortage gave tremendous impetus to the bombardment doctrine as the ACTS was formulating and testing it. Among the planners on the faculty were two men destined to become famous as general officers in World War II: Laurence S. Kuter and Haywood S. Hansell. The daylight, precision portion of the bombing picture was cleared considerably when, in 1933, the Norden Mark XV bombsight was introduced. It, coupled with the B-17, made realizable doctrine out of what had simply been considered a concept. It is a

tribute to the small group of professionally dedicated students and faculty at the Tactical School that at no time were fears expressed over the radical innovators at Maxwell. For the students attending the classes there was an air of excitement and fraternalism that existed which made attendance at the Maxwell school greatly desirable, accounting for Major Kepner's unwillingness to turn down his orders after Explorer I and Captain Anderson's equally intense desire to become a student there. Without doubt, the air doctrine put into effect when the United States went to war in 1941 came directly from the classrooms of the Tactical School, and the people who hammered it out in lengthy sessions were, by and large, the same people who led the air efforts of the nation in World War II.[11]

The school to which Anderson had been assigned divided its curriculum into four major parts: aerial subjects, by which was meant the study of the effect of the airplane upon war and the use of the new dimension in the overall scope of war; ground subjects, meaning artillery, infantry, chemical and troop command; general subjects, into which the school lumped logistics, communications, intelligence, and staff duties; and finally, the catch-all section consisting of map reading, organization, geography and strategy, and the operation of sister services.[12] Without exception, the heart of the school was in the aerial

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[11] Historical Study 100, pp. 25, 32-33, 52; Historical Study 89, pp. 80-82.

[12] Historical Study 100, pp. 20-21.

subjects, where instructors would lecture on accepted policy for twenty or thirty minutes and then expound on an idea or concept of their own choosing. This almost always provoked lively debate, both in and out of class, and constituted the primary way in which air doctrine was formulated. This unorthodox method did not in any way imply flippancy about the conception of air doctrine. To the contrary, students and faculty alike took their school and schooling most seriously. The problem was simply that no one could prove the full value of air power in war because it had never been tested, especially in its more modern format of the later 1930s. Taking into account the technological state of the art, only common sense and logic could actually forge a doctrine, and no one student had a monopoly on those concepts. As Major Harold L. George told his class on Air Tactics in 1935:

> From today on much that we shall study will require us to start with nothing more than an acknowledged truth and then attempt, by the utilization of common sense and logic, to evolve a formula which we believe will stand up under the crucial test of actual conditions. We shall attempt to develop logically, the role of air power in future war, ...
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> In pursuing this purpose, we realize that air power has not proven itself under the actual test of war. We must also realize that neither land power nor sea power has proven itself in the face of modern air power.

Then Major George asked the significant air power question of the day:

> Has the advent of air power brought into existence a method for the prosecution of war which has revolutionized that art and given to air forces a strategic objective of their own independent of either land or naval forces,

> the attainment of which might, in itself, accomplish the purpose of war; or has air power merely added another weapon to the waging of war which makes it in fact only an auxiliary of the traditional military forces?[13]

Small wonder that students like Anderson, and some of his classmates who went on to gain fame in World War II and after, found the school the most stimulating experience of their Air Corps lives.[14] Given the right to challenge, within the confines of the school, national policy as it pertained to the use of air in a defensive role, students were not long in recognizing the theories of General William (Billy) Mitchell and the Italian, General Giulio Douhet. It was the latter's well-conceived theories which, although they were late in arriving here in the United States due to translation, proved to be the seconding impetus needed to push the already well-developed bombardment theories into acceptable doctrine.[15] Out of the study of these two theories and the development of the B-17, plus the work at the ACTS, came the concept that the

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[13] Major George (later Lieutenant General USAF (retired)) left ACTS shortly afterwards for Washington D.C. to become one of the prime planners of WW II and the co-author of the famous war plan, AWPD-1. Historical Study 100, p. 28.

[14] Some of Anderson's famous contemporaries were: Captain U. G. Ent (later Major General), First Lieutenant Frank F. Everest (later General), Captain Robert W. Harper (later General), and Captain Earle E. Partridge (later General). There were 71 students enrolled in the class. Ibid., Attachment 1.

[15] For a complete discussion of the theories of Mitchell and Douhet as applied at ACTS see Raymond R. Flugel, United States Air Power Doctrine: A Study of the Influence of William Mitchell and Giulio Douhet at the Air Corps Tactical School 1921-1935, (unpublished Ph.D. dissertation, Department of History, University of Oklahoma, 1965).

bomber, even alone, was invincible to fighters, and a determined bomber attack, once launched, was almost impossible to stop. From this point it was but a short step to the idea of the vulnerability of key selected industrial targets and the concepts of strategic bombardment to knock out a country's war-making capability from the air. So sure was the majority of the faculty who studied and argued at the Tactical School that they were right, that the doctrine which they formulated was accepted by its graduates as they assumed positions of power, as not only doctrine, but dogma. This nearly fatal assumption would be placed vividly into the spotlight of scrutiny after the initial difficulties of the B-17s and B-24s over Europe in 1942 and 1943.[16]

The Tactical School was not all work for Captain Anderson. On 12 February 1937 he was promoted to Major which led Dr. McKnew, of National Geographic, to kid him in a letter by sending "all good wishes to Major, Doctor, 'Swift Eagle' Anderson."[17] He was still very much in demand as a speaker, but the requirements of the school came first. Very willing to accept the invitations which were addressed to the school and forwarded to him, he was often stopped by a curt note

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[16] Historical Study 100, pp. 30-33. An excellent, in-depth discussion of the formulation of Air Corps thought at the ACTS is contained in USAF Historical Study No. 139, Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (unpublished study, Maxwell AFB, Ala., 1970).

[17] "Swift Eagle" was the name given Anderson when he was made an honorary chief of the Shoshone nation the previous year. File, "Personal Correspondence," Archives 168.7006-1.

from the Commandant to the effect that he could speak so long as he departed after classes and was present for the beginning of classes the next day. There was time for flying proficiency as well, and Anderson managed to work in a sufficient amount to meet all requirements and spend ten days on a cross-country flight to the west coast, South Dakota, Utah, and Texas just after graduation in June 1937. For a brief period following this flight, Anderson went on temporary duty to Edgewood Arsenal, Maryland, to complete a six-weeks course at the Chemical Warfare School. He returned to Maxwell in time to pick up Mrs. Anderson for a move to Fort Leavenworth, Kansas, and a year at the Army's Command and General Staff School.

Prestigious as was the Command and General Staff School, it seems doubtful that Major Anderson gained nearly as much profound learning from it as he had just received from the Air Corps Tactical School. By tradition the Army school was a necessary step in the ladder of career progression. Not that there were not things to be learned, for there were, and the curriculum was a great deal more formal, better organized, and certainly more tightly controlled. For the problems presented there was a solution, tried in battle and tested as well in years of theory. At the Tactical School, to the contrary, the problems considered always ended with the vagueness that the theory of air power as a large factor in combat simply had not yet been proven, regardless of what logic and common sense might seem to dictate. In

a very real sense the two schools complemented each other, and the custom had grown that an officer should go first to the Air Corps school and then to Fort Leavenworth.

It was a pleasant year spent on the edge of the Kansas plain. The Anderson's enjoyed the assignment both scholastically and socially, despite the rather small apartment to which they were assigned located in one of the older buildings of the post. After such complete absorption in air doctrine, it was interesting to get back into the familiar army tactics, strategy, and procedures. Since the Air Corps was an integral part of the Army at the time, the study was not wasted by any means. Yet, always in the back of his mind, and those of the other flyers as they studied, was the gnawing question of the place for air power in the overall scheme of things. To the old-line Army officer, the Air Corps existed to perform coastal defense, and that not-too-far-out for fear of infringing upon the prerogative of the Navy, and battlefield reconnaissance. Technology had forced a grudging admission that there would be aerial battles, but they were considered minor and irrelevant to the overall conduct of the ground war. The radical thought, spawned at Maxwell, that aerial power just might win a war was considered by the purists, and with justifiable logic in that day, as pure poppycock. On the other hand there were many army officers, and the curriculum at Fort Leavenworth reflected it, that believed in the use of air power,

and its efficacy in turning a trench stalemate into a fluid battle as well as to hit severely an enemy's industrial heartland. The school discussions were long and interesting, but there was no decisive outcome in 1937.

Being so close to their many friends in Rapid City, South Dakota, and to Mrs. Anderson's parents in Council Bluffs, Iowa, the couple could not resist the opportunity to take an extended leave at the conclusion of the school year. Anderson requested six weeks leave and the two headed north for an extended visit. Not even the prospect of meeting the leading Polish balloonist in Chicago could deter them, and Anderson invited him (Captain Burzynski) to join them at the Alex Johnson Hotel in Rapid City. The two aeronauts' schedules did not mesh, and later in 1938, Major Stevens went over to witness a Polish attempt to balloon to the stratosphere. The first attempt failed due to inflation in the open where a breeze capsized their balloon. A second attempt in 1939 was stopped by the German invasion.[18] At the conclusion of their leave, the Andersons headed once again for Maxwell Field, this time for an assignment with the Air Corps Board.

Following the example of the other services, the Air Service Board was established at Langley in 1922. Lacking enough senior personnel to assign to such a policy-making body, the faculty of the Air

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[18] Anderson, "Ballooning in the Stratosphere," p. 14.

Corps Tactical School doubled as members of the Board for consideration of such problems as were assigned to it. Very often, problems concerning the War Department's use of airplanes were referred to the School students for suggested solutions.[19] The Board languished at Langley due to lack of use and the fact that Brigadier General Foulois, Assistant Chief of Staff, failed to assign sufficient senior officers (at that time meaning colonels, lieutenant colonels and majors) to man the few authorized positions. When the Air Corps Tactical School moved from Langley to Maxwell in 1931, the Board moved with it. By 1933 renewed interest in the usefulness of the Board was indicated and it was resurrected. The manning problem had not been solved, but the commandant and assistant commandant of the Tactical School were added to the Board and new assignments were made.

The Board's original mission, similar to like Boards existing in the infantry, field artillery, coast artillery, transportation corps, and other Army branches, was to consider such subjects as might be referred to it by the Chief of the Air Corps and to originate and submit to the Chief recommendations bearing on improvement of the Air Corps.[20] In addition to the two Commandants, the Board was to consist of not less than five nor more than eight officers. The Commandant was the

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[19] Historical Study 139, p. 95.

[20] Army Regulation 95-20, 17 August 1933, provided the official basis for AC Board organization. File, "Organization of Air Corps Board, 1933-1940," Archives 245.604-4. Also Historical Study 100, pp. 9, 16-19.

President of the Board and the junior officer was the secretary. While Board communications usually went through the Tactical School for forwarding to the Chief of the Air Corps, they did not have to do so, for the chain of command came directly from, and went directly to, the Chief. It was his Board to use for fact-finding and for advice. As the Air Corps grew in complexity and its mission expanded, the Board became more important to the Chief. Almost immediately upon its reactivation early in 1935 its use steadily increased. It was to this Board that Major Anderson, his schooling completed, reported on 4 August 1938.

There was no doubt about the challenge of the new assignment. Fresh from school, Anderson had ample theory to rely upon when presented with a problem needing solution. It might be to formulate tactics to be used in fighter operations, an improved observation balloon, defense against antiaircraft guns, a test of enlisted men's field jackets, flying helmets, chemical bombs, bombing accuracy, or Air Corps expansion. Each of these subjects occupied some of Anderson's time while he was on the Board. In all, this small organization, working closely with the Tactical School and calling upon its personnel when needed, considered some seventy-seven different projects from 1935 to May of 1942 when it was inactivated at Eglin Field, Florida. Records do not reveal to what extent Anderson worked on each one, merely, as is usual in military committee or board work, that he was a member

of the Board as a whole. Since the Board had to meet periodically at the call of the Chairman to consider each of the projects before it and hear a status report, it is possible to be reasonably certain that Anderson knew something about each report which was written during his tenure, and worked more specifically on certain ones.[21] Records do exist showing Anderson traveling to various air bases throughout the United States for short periods of temporary duty in the furtherance of Board projects.

In June of 1938, the Air Corps Board was handed a theoretical study by then Brigadier General H. H. Arnold, Assistant Chief of the Air Corps. Increasingly concerned with the growing international tensions, Arnold asked the Air Corps Board to study the role of the Air Corps in support of national policy as represented by the Monroe Doctrine. Arnold also wanted knowledge of the study kept from the War Department and accordingly classified it Secret. The Board was still wrestling with the procedures for the study when Anderson reported to Maxwell in August. He was made Board recorder and recalled the study later on as one of the most unusual ever brought before the group. Never had a situation so clearly called for the use of long-range bombers and quasi-independent air force actions as did hemisphere defense.

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[21] The Board was reactivated on 27 October 1942 at Orlando, Florida as the Army Air Forces Board. Historical Study 100, pp. 18-19, 42; File "Status Reports ACTS, FY 1939-41," Archives 167.5; Historical Study 139, pp. 117-18.

Anderson was detailed to study the logistical requirements and was able to demonstrate the inherent efficiency of long-range aircraft in terms of the number and type of planes, the quantity of personnel needed, and the number of air bases required. With the signing of the Munich agreement, Arnold, by now the Chief of the Air Corps due to the death in an aircraft accident of General Westover, feared a German renaissance in Africa to reclaim her pre-World War I colonies. From there it would be a short distance across the Atlantic to Brazil and a foothold in South America. The study, "Number 44, Air Corps Mission Under the Monroe Doctrine," was not finished, but Arnold called for it on 18 October. He promptly accepted what recommendations were made, i.e., the development of a plane with a radius of action of 1500 miles and a service ceiling of 35,000 feet or more. He also pushed for a prompt increase in the number of aircraft to be built for the Air Corps.[22]

Something of the urgency that the Board, and especially Anderson, had felt for the safety of the Western Hemisphere, was communicated to Arnold, and through him to Brigadier General George C. Marshall, the Army's Deputy Chief of Staff. While General Malin Craig, the Chief of Staff was not overly excited, particularly where airplanes

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[22] Wesley F. Craven and James L. Cate (eds.), The Army Air Forces in World War II, Vol. I: Plans and Early Operations (Chicago: University of Chicago Press, 1948), p. 119; Status Report--Air Corps Board--FY 1938, Archives 167.5; O. A. Anderson, "Development of U. S. Strategic Air Doctrine, ETO, World War II," a lecture given to the AWC 20 September 1951; Historical Study 139, pp. 146-47.

were concerned, President Roosevelt, with his own sources of information, was seriously disturbed with the Axis showing of air power in Spain. There seemed to be little doubt that the "sell-out" at Munich had been based to a great extent upon the already demonstrated potency of the Nazi's air force. Accordingly, on 28 September 1938, at a meeting at the White House, President Roosevelt issued what Arnold later called the "Magna Carta" of the Air Force. Roosevelt called for airplanes, not ground forces, to counter Hitler's actions, and specified 20,000 planes as soon as possible plus a production capacity of 24,000 per year. The group in the President's office that day included the Secretaries of War, Navy, and Treasury as well as their assistants, General Craig and General Marshall, Admiral Stark and Presidential assistant and confidant, Harry Hopkins, as well as General Arnold. The announcement caught everyone by surprise except Hopkins and Arnold. When the meeting was over, Arnold relates in his memoirs, he drove the Army Chief of Staff over to his office for an intensive briefing on air power and its capabilities. From that time on, Arnold related, Craig was a much stronger friend of air power than ever before. If Arnold is correct it is a tragic thing that as late as September 1938, the Chief of Staff of the Army had to be briefed on air power. Arnold indicates that this was a reasonably typical attitude toward air power among many people in official Washington at this late date. The absolute and utter positiveness of the President's attitude on air power came as

a great shock to most of the high officials and caused the Air Force to do some frantic scrambling to make sure its planning for the future was up to the tremendous demands placed upon it by the President's edict. Arnold notes in his book, almost plaintively, that he still had to defend the Air Corps expansion to isolationist Congressmen who asked questions such as, "Will you tell this Committee just what you mean by 'emergency?'" and "Who is this new country that we fear?" and in the summer of 1939 one solon demanded, ". . . who are we going to fight?"[23]

The President's emphasis on air power touched off the biggest expansion in the Air Corps since it bought its first plane. Despite this happy turn of events, there still remained the question of what the proper mission of the Air Corps should be. In the spring of 1938, three B-17s had flown 615 miles out to sea and in a magnificent piece of aerial navigation over water (First Lieutenant Curtis E. LeMay was the lead navigator on the flight) had "intercepted" the Italian luxury liner S.S. REX, dropped a note of good wishes on her deck and returned to their home base safely. General Arnold relates that the Navy was as furious as the Air Corps was elated and, since the Admirals had the greater influence in Washington circles at the time, they proceeded to have the mission of the Air Corps, ostensibly coastal defense, restricted to a maximum of 100 miles out to sea from the American coastline.[24]

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[23] Arnold, Global Mission, pp. 177-83; Historical Study 139, pp. 148-49.

[24] Arnold, p. 176.

The Air Corps Board at Maxwell was not exempt from the Air Corps' rush to put its house in order to be ready for the expansion. Anderson's Board, in the spring of 1939, was engaged in a study on "Employment of Aircraft in Defense of the Continental United States." It was acknowledged to be a hasty study, but the conclusions published on 7 May 1939 after considerable long hours by Anderson and the other Board members, laid out in very plain and basic terms some of the truths of twentieth century warfare and of air power. The Board assumed that the United States would be attacked by land, sea, and air forces to secure bases from which to operate against our main industrial centers. Air power was defined as "a measure of a nation's capacity to wage air warfare," and it saw its role as one to strike the enemy decisively and yet retain its own integrity. It made sense to increase the range of aircraft so that the striking could be done farther away from American shores. Air power's role became then essentially offensive in nature and not the coastal defense concept to which it had been assigned. Therefore, the Board Report went on to say, major emphasis should be upon the construction of offensive airplanes, primarily long-range heavy bombers. It was desirable to have fighters for security forces over the homeland and even as escort for the bombers, but the latter mission was seen as "impractical" at the time. Here Air Force logic fell down in accepting only the state of the fighter aircraft currently at hand and not planning for anything better and faster that could outspeed

the bombers. But, the goal was 24 groups in two years with a total of 5500 planes being the best a parsimonious Congress would finance at the time.[25]

While it was full speed ahead on aircraft construction, the German invasion of Poland brought home the painful reality that large bomber aircraft could not expect to escape untouched from modern fighters. American Air Corps fighter personnel counseled General Arnold that renewed emphasis had to be placed upon faster fighters to accompany the bombers. The Air Corps Board was asked for and completed another study which recognized the importance of the fighter and its improved ability, but stated naively that by adding more guns to the American bombers their firepower could be made much greater than that of their European counterparts that were being shot out of the skies by German fighters. The Board recommended the development of a long-range fighter, but said no thought should be given to canceling the mission of a bomber just because fighter escort was not available and especially no thought should be entertained about the reduction of importance of bombardment aviation in the Air Corps doctrine.[26]

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[25] Air Corps Board Study No. 35, Employment of Aircraft in Defense of the Continental United States, dated 7 May 1939, Archives 145.93. Air Corps expansion at this time can be documented in detail with the Archives files (145.93-50 through -60). A briefer but quite complete discussion is in R. F. Futrell's Historical Study 139, pp. 152-54.

[26] Air Corps Board Study No. 53, Fire Power of Bombardment Formations, dated 3 January 1940. Archives 145.93. Also Historical Study 139, pp. 159-60.

The tremendous success of the Germans in Europe and the English in the Battle of Britain served to convince many skeptics of the efficacy of air power. Accordingly, General Marshall, now the Chief of Staff, authorized the Air Corps to expand to 54 groups, an increase of 30 over the previous mark, on 12 July 1940. The ink was hardly dry on that expansion order when another was granted for 84 groups. The long-delayed and now urgent procurement of airplanes was under way. Remaining was the reorganization of the Air Corps into a more efficient operating staff agency of the Army. The success of the British, whose Royal Air Force had been a separate military arm since World War I, led some to call for separation, but Arnold resisted this appealing temptation in order to get on with the job of expansion. There were many gradual changes in the reorganization process, but the big breakthrough came on 20 June 1941 when the Army Air Forces was created and Arnold was made Chief as well as Marshall's Deputy Chief of Staff for Air. This allowed Arnold to form his own Air Staff which he proceeded to do immediately. Authority was granted the Staff to coordinate all matters pertaining strictly to air within Arnold's organization and to put them into effect, thereby bypassing the often unsympathetic Army General Staff. The Air Staff was made up of A-1 (Personnel), A-2 (Intelligence), A-3 (Operations), A-4 (Supply and Maintenance) and a smaller group called Air War Plans (occasionally referred to as A-5). Into this latter group went some of the best-known Air Force leaders

and some of the finest planning minds. From it came the famous Air War Plan Number 1, better known as AWPD-1.[27]

In March 1941, orders detailed Anderson temporarily as Air Corps Liaison Officer to the Fourth Corps, U.S. Army headquartered at Jacksonville, Florida. Rather than change his residence for what was to be a brief assignment, Anderson was authorized to make temporary duty trips "not to exceed ten . . . ." from then until 30 June of the same year. His duty was to pursue the problem of air support of ground personnel in battle and the type of ground to air communications needed to insure the prompt arrival of aircraft when the ground commander had need of them. It was vitally important work, as World War II had already demonstrated in Europe, and it was an interesting and exciting challenge for Anderson after the research-study-write routine of the Air Corps Board. Considering the obvious need for air-ground liaison, the American army appeared to be negligent in waiting so long to define tactics and operations between the ground forces and their air support. If fault need be fixed, it belongs, at least in part, to the apathetic and isolationist-minded public which forced curtailed budgets and unrealistic missions upon the military forces.

Rapid strides were made by Anderson and the team of Fourth Corps officers detailed to study the problem. There was little disagreement as to the need, only in the details of air-ground coordination and

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[27] Historical Study 139, pp. 170-73.

location of ultimate command. Anderson worked closely with Major General C. L. Bolte, then Commander of the Fourth Corps, in the early stages of the doctrine's development.[28] By July of 1941 the draft field manuals on air-ground coordination and tactics had been completed and approved. Anderson's work in Florida was finished and he returned to Maxwell just long enough to prepare for a move to Washington, D. C. By now a Lieutenant Colonel, with a great deal of troop duty, and an illustrious career already behind him, and with considerable schooling and planning experience just completed, Anderson seemed a logical choice to join the office of Air War Plans in the Pentagon--the same office that was about to author the Army Air Corps plan of operation in the approaching war, AWPD-1.

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[28] Letter, Major General C. L. Bolte to Anderson, 14 December 1946. File, "Personal Correspondence," Archives 168.7006-1.

CHAPTER IV

PLANNING FOR WAR

War Department planning in the late 1930s had remained concentrated upon the defense of the United States, its possessions and to a small degree to the defense of the Western Hemisphere. President Roosevelt, along with many military leaders, grew increasingly apprehensive over the events in Europe and began requesting new, updated plans. Jointly, the Army and Navy had formed a board which had made several plans theoretically detailing different foreign nations and combinations thereof as the enemy and spelling out in general terms what the American reaction should be in the event of war in each particular pattern. Each plan bore the code name of a different color such as red or blue. Collectively, the various plans became known as the Rainbow Plans. In May of 1938, the planners completed Rainbow Plan Five, code-named Orange, which envisioned the United States, Britain and France fighting Germany and Italy. The collapse of France and the assimilation of Japan into the Axis on 27 September 1940 brought about a revision of the plan in which its scope was broadened to include Japan and a two-front war.

In addition to the American Plan, the British had joined the American Army and Navy planning staffs in January 1941 to establish principles of cooperation between the two countries. By late March, the Anglo-American group had completed a general plan which became known as the American-British Conversations-1, or more commonly, ABC-1. The ABC-1 recognized Germany as the more powerful adversary hence the initial effort would be to defeat the Nazis through economic blockade, a sustained aerial offensive, early defeat of Italy and an eventual land offensive against Germany. One of the prime missions was for the Allies to achieve "superiority of air strength over that of the enemy, particularly in long-range striking forces." Rainbow Five was modified to accommodate ABC-1, both were submitted to the Secretaries of War and Navy for approval, and they, in turn, sent them to President Roosevelt who added his tentative agreement requesting that both be returned to him for formal approval in the event of war.[1]

Such was the extent of overall planning when Lieutenant Colonel Anderson joined the Air War Plans Division in July 1941. On the 9th of the same month, President Roosevelt requested the Secretaries of War and Navy to prepare an estimate of "over-all production requirements required to defeat our potential enemies" which the office of Production

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[1] Craven and Cate, I, pp. 136-41; Historical Study 139, pp. 180-81.

Management could then use as a basis for establishing production facilities. The Army War Plans Division asked the Air Plans section to prepare estimates on the maximum number of squadrons which the Air Corps would need to garrison a great many geographical sites and still have ample reserves. The Army Plans Division had been completely swamped by the magnitude of the plan the President had requested and the amount of work entailed in enumerating the quantity of men needed while relating them to a specific number of divisions. As a result, the air annex to the Presidential "estimate" was put aside, much to the consternation of several Air Corps officers in the Army office. These officers went to General Arnold to express their fear that the Air Corps just might be eliminated altogether in the press of time. Arnold suggested to the Army Chief of Plans that the Air War Plans section be allowed to write the Air Corps portion. Thinking that this would be simply an Air Annex to the Army plan, the Chief of the Division readily agreed. The Air Corps section received orders to develop the plan on 4 August.[2] Colonel Harold L. George was chief of the section which had only Lieutenant Colonels O. A. Anderson, Kenneth Walker and Major Haywood S. Hansell. The temporary services of other officers including two from Supply and Logistics (A-4) and Intelligence (A-2) and Majors Hoyt S. Vandenberg (future Chief of Staff of

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[2] Interview with Major General Haywood S. Hansell, USAF (Retired), 5 June 1969.

the Air Force 1948-53) and Laurence S. Kuter (later General USAF, now retired). Colonel George's group ignored the limitations of the request and, instead, undertook to prepare a comprehensive aerial plan for the defeat of the Axis powers.

Time was short so research was almost nonexistent. Officers from the various staff sections were called in for their expertise and lengthy discussions were held on such matters as target selection. Often the team of officers worked all night, breaking only for coffee and for breakfast before resuming the next full day's work. General Hansell attributed this to "a self-generated enthusiasm rather than orders to work long hours." Often Hansell and his other colleagues in AWP simply got interested in an idea or concept and pursued it until all the details were assembled and written in nearly final format.[3]

Colonel George had parceled out the work to two and three-man teams. No record exists as to exactly what sections of the plan Anderson worked on except an interview made two years later. In the course of this conversation, Anderson states that he was assigned the section on preparing for the personnel expansion of the Air Corps in the event of war. Actually, most of this planning was done as a supplement to AWPD-1 and was not included in the original plan. As the junior member of the group in terms of length of assignment to Plans, Anderson spent most of his time assembling and correlating facts and whipping

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[3] Ibid.

the end results into final form, while George, Hansell, Kuter and Walker are given most of the credit for the overall preparation. The report was completed and submitted eight days later, on 12 August 1941. Bound in legal-sized volumes almost four inches thick, the plan, AWPD-1, was rushed through coordination at the last possible moment. Very little study was given to the detailed plan before it was approved by General Marshall, Assistant Secretary for Air, Robert Lovett and Secretary of War, Henry L. Stimson. Only after the plan was approved did the Army notice its radical nature and all-encompassing character. By then it was too late, and the Army Air Corps had a plan which was to serve as the basis for all of its World War II activity.[4]

The new plan incorporated Rainbow Five and ABC-1 and went further to spell out how many planes and people were needed. The air planners felt it improbable that a land offensive could be mounted for at least three years after war was declared, and, if the air offensive envisioned was successful, such land operations might not be necessary at all. Three lines of air action were established for the onslaught in Europe; the first being strategic attacks upon Germany's electrical power, transportation system, oil, and civilian morale (by bombing

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[4] Ibid. See also Hopper, Interview, Sept. 1943, pp. 35-36; Historical Study 139, pp. 181-82; Craven and Cate I, pp. 131, 146-50. Original copies of AWPD-1 exist in the USAF Archives and General Hansell's personal copy is on display in the Air University Library Special Collections Room.

cities as needed) in that order. This was to be the principal objective after which, in second place, came the gaining of aerial superiority by attacks against air bases and aircraft factories. [In actual practice, number one and number two had to be reversed due to unacceptable losses.] Thirdly, air attacks were to be made upon submarine pens, surface ships and invasion ports. For success in all this, the planners counted completely upon the untried Air Corps Tactical School concept that was now not only doctrine but dogma--daylight, high-altitude precision bombardment relying upon bomber speed, massed formations, high-altitude, self-contained defensive firepower and armor to make the required deep penetrations of the European continent from English bases. They did agree that the development of a long-range fighter would be a wise move. The bombing of cities was not favored as a continuing tactic but only to further damage enemy morale in conjunction with attacks upon other targets and when civilian morale was already low due to suffering or deprivation or because the war's cause seemed lost. Provisions were made for Western Hemisphere defense and for sending bombers to the Philippine Islands to prevent the Japanese from moving on the Netherlands East Indies.

In the plan a plea was voiced for a 4000-mile range bomber (later to be the B-29 and B-36) and for a total of 203 groups of varied types of planes by late 1943 or 1944 totaling 59,727 airplanes. The bombing campaign as outlined was envisioned to take only six months,

and it was speculated that ninety-eight groups would be necessary for that European effort alone. All of these planes would need, the planners further estimated, 103,482 pilots and a total of 2,164,916 personnel for the entire AAF.[5] The plan was offensive in nature, contrary to most of the thinking and planning done by the Army and Navy to that point, dictated, in turn, by a national policy declared by Congress and the people. Acceptance of the plan, hasty though it was, did indicate indorsement of the concept that a land invasion might not be necessary in Europe if air power did its job properly. There is no record of just how many military leaders, outside the Air Corps, really believed this was possible. It was this hasty indorsement, among other things, that caused such consternation among the Army and Navy when the dust had settled and an opportunity for full study was at hand. Tacitly, the Air Plans section had assumed a position of equality with the Army and Navy Plans Divisions, a situation not looked upon with favor by the older services.

The President, in his request, had not asked for a detailed report, but the AAF planners, working almost around the clock for a week, had literally drawn up the blueprint for the air war to come. Looking back on it, it is easy to find flaws in the plan, but hindsight was not granted the small group of authors in those hectic prewar days.

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[5] These figures proved remarkably close to the actual wartime totals of 2,411,294 officers and men. Aircraft production exceeded expectations as well as estimates reaching a total of 230,287 planes of all types.

For instance, the forces allocated in AWPD-1 for the Pacific theater were found later to be inadequate, those scheduled for hemisphere defense too numerous, and the unbounded faith in the ability of air power to defeat a nation single-handedly misguided. Nevertheless, as a program for the aerial bombardment of Germany the plan was a "remarkable document." The tactics suggested and the strategic targets delineated were accurate. In the case of the targets, had the AAF leaders followed AWPD-1 instead of changing the bombing objective priorities, the economy of Germany might have been hurt in a greater way much sooner. For whatever his actual contribution to the plan was, Anderson had arrived in the Plans section just in time to be a part of the single greatest air plans document of World War II.[6]

The sudden beginning of America's war on 7 December 1941 found the Army Air Corps still unprepared to fight an aerial war despite the excellent plan recently completed. The overall Army plan, Rainbow Five, was invoked immediately with modification as necessary. In the AAF plans section Colonel George and his staff of Hansell, Walker, and

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[6] Albert Speer, Reich Minister for Armaments and War Production in Nazi Germany, admitted after the war that "The planned assaults on the chemical industry (synthetic oil) which began on May 12, 1944, caused the first serious shortages of indispensable basic products and therefore the greatest anxiety for the future conduct of the war. Actually, this type of attack was the most decisive factor in hastening the end of the war . . . . The attacks on the synthetic oil industry would have sufficed, without the impact of purely military events, to render Germany defenseless." As quoted in General Carl A. Spaatz, "Strategic Air Power: Fulfillment of a Concept," Foreign Affairs, XXLV, No. 3 (April 1946), p. 385. Also Craven and Cate, I, pp. 149-50.

Anderson, put together a third plan, AWPD-4.[7] Like other plans to follow, no particular numerical sequence was used or intended. Dated 15 December 1941, the plan entitled "Air Estimate of the Situation and Recommendations for the Conduct of the War," was little more than a restatement of the most significant points of AWPD-1 with emphasis upon protection of the Western Hemisphere and Britain, reinforcement of the Philippines and a prompt beginning of the air war in Europe. The urgency of war was reflected in the fact that the plan called for an air force of three million men and 90,000 planes with a "national first priority to the production of aircraft."[8] This priority was not granted nor was the total number of personnel ever reached, but it reflected the desires of the planners at this early stage of the war. Because of the rejection of the priority request, more reliance was placed upon AWPD-1 than upon its supposedly updated version, -4.

Throughout the fall and winter of 1941-1942, Anderson worked on a variety of projects within the Plans section. He spent time formulating a study on the B-17 and its defensive gunnery capabilities, on the stock-piling of ammunition at outlying bases in both the European theater and the Pacific, and on the attrition rates which might be expected by our commanders when our planes began operations out of

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[7] AWPD-2, dated 9 September 1941, was a minor revision of the number of planes to be produced with lend-lease allocation schedules to Britain, Russia, China and other allies. Its significance was minimal when war was declared a short time later.

[8] AWPD-4, Section V, 1D. Archives 145.82-4.

English bases. These studies were accomplished in addition to the many briefings he attended and conducted, and the seemingly interminable committee meetings through which so much of Washington's business is conducted. Workdays began at 0815 and ended at 1700 Mondays through Saturdays and the office was always open on Sundays for anyone who had additional work to do. After Pearl Harbor there was almost always someone at the office every day and well into the night. Much of the Far Eastern theater planning fell to Anderson as some of the other Plans veterans were tapped for important command positions overseas. After a particularly galling week of committees and briefings at which he, as a Lieutenant Colonel was usually the junior officer, Anderson went in to report to General Arnold on the progress of the section. After his report Arnold expressed some displeasure at the fact that more progress had not been made. To this Anderson replied that he simply did not have sufficient rank to make his opinions heard and considered in the meetings. On 1 February 1942 Anderson was promoted to temporary colonel. He went home that evening, positioned himself in front of the fireplace with his elbow on the mantel so that the new eagles on his shoulders would show, and asked Mrs. Anderson whether she would consider having a drink with a Colonel. Her answer, she recalls, was a most happy "yes!"[9]

With the acceptance of AWPD-1 and the necessity of fighting

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[9] Interview, Mrs. Anderson, March 1969.

all-out war on two fronts, expansion was the order of the day for the Air Corps. Converting the numbers and concepts of the Plan into every-day airplanes and men became one of the chief occupations of Anderson. As he talked about it later:

> . . . we proceeded to prepare expansion programs. That was an assignment that was tossed into my lap, for no sound reason . . . . it was given to me in the Plans Division, to work up and correlate and coordinate the progressive programs. We set up in the course of about a year three such programs. An initial program; a '42 - overall program; and then a 1943 program, which was supposed to approximate our leveling-off objective . . . . The first . . . being to arrive at an 84 group strength; our second program to arrive at a 224 group; and our third program, 273 groups.[10]

Such an ambitious set of goals had the advantage of allowing the Air Corps to set intermediate stops by which, as Anderson put it, they could "cut our cloth to." The problem was compounded by the lack of any prior experience. The Air Corps had authorized a 54 group organization well before the outbreak of war, but it was simply an authorized figure and no plan to achieve it had been established.[11]

On 9 March 1942 a reorganization took place within the War Department which officially elevated the Army Air Corps to one of three coequal forces, the other two being the Army Ground Forces and the Army Service Forces. Each was headed by a Commanding General, in the case of the Air Forces by General H. H. Arnold. This was as

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[10] Hopper, Interview, Sept. 1943, pp. 36-37.

[11] Ibid., p. 37.

near to autonomy as the nation's air arm would get until 1947, and with a war to fight it was near enough for the job at hand. Within the Air Corps the functions of Plans were taken over by Personnel, Intelligence, Training and Supply (A-1, 2, 3, and 4 respectively) and Plans was left to itself as a coordinating agency for the other four, and not, any longer in theory, as a planning agency.

In the pell-mell planning going on in wartime Washington, no one seemed to pay close attention to budget figures. Occasionally, when such things got in the way, interservice meetings had to be held to ascertain just who would get what. It was only natural that rivalry would rear its head again; it seemed to have been such an accepted part of prewar service operation since the Congress authorized so few defense dollars and expected all three services to be happy with the meager ration each received. Now, in the urgency of expansion, a somewhat similar thing was happening only on a much larger scale, and not just for dollars but for men and planes of which there were just so many available and so many to be produced even with the magnificent production effort taking shape already in the United States. Anderson had his disputes with his naval counterparts and later related what he considered their concept to be in a sarcastic vein:

> We've always been imitators of one nation--Britain . . . . We have a big floating Maginot Line; it moves at 25 knots an hour full steam. And it is still very much a Maginot Line. I put 20 ships in line; I know they can't support themselves, so I put a ring around them of cruisers. I

> know the enemy can knock them down, so I flock up destroyers around them. Now they are building up a little bit of security, but haven't got enough yet. Submarines will get me, so I counter the submarine with a submarine screen and PT boats. But still I've missed the boat. If I can put about 5,000 or 30,000 airplanes on top of it, and keep the sun out of them, they'll be safe.[12]

With the reorganization of the War Department and the Air Corps placing most of the planning functions in Washington, the Air Corps Board was inactivated in May of 1942 and the Air Corps Tactical School, seedbed of air theory, was suspended in June. Despite the reorganization, which had removed much of the planning functions from the Army Air Forces as they were now known, President Roosevelt asked General Arnold on 24 August 1942 to submit his judgment concerning the number of combat aircraft that must be produced in 1943 in order to gain complete air ascendency over the enemy. Brigadier General Kuter, now Deputy Chief of the Air Staff, Colonel Anderson, now Chief of the Plans Section, and Brigadier General Hansell, soon to become Deputy Commander of the Eighth Air Force, set to work on the study which they completed on 9 September 1942. It was numbered AWPD-42, the number designating the year of the study, and titled, "Requirements for Air Ascendency."[13] The President's request

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[12] Anderson's dislike for the Navy was not an isolated situation. It was, in Anderson's case, to become so fierce as to be characterized as a "war." (See Chapter VIII) When the chips were down, however, then as now, the two services fought together well with full cooperation against a common enemy. Ibid., p. 41.

[13] General Anderson's personal copy of AWPD-42 is in the Archives, 145.82-42.

specifically stated that the plan was to be drawn up regardless of materials, priorities or other considerations. Then he wanted another program based upon realities and what cold hard facts dictated that the United States could accomplish.

The Plan, as completed, nearly staggered the imagination in the dark days of mid-1942. The Army Air Forces would require 281 combat groups made up of 75,416 planes, in addition to which the Navy would need 33,000 planes and the Marines 22,400 for a total of 130,906. As for personnel, the Plan called for 1,784,347 officers and men in the Army Air Forces alone, and 950,000 in the air arms of the other branches. On the logistics side, 1.1 million tons of bombs were to be needed, 4.88 billion gallons of gasoline and 17.4 million shipping tons to move these vital supplies to their destination. The second part of the Plan went into considerable detail in outlining the specific targets to be bombed and the estimate as to how many aerial sorties (one plane on a single mission is a sortie) and how many days it would take to destroy a target.[14]

While the personnel that prepared AWPD-42 were almost the same as those who did AWPD-1, the thinking had changed somewhat,

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[14] As an example, oil targets called for 8322 sorties with 280 bombers in 35 operational days; electrical power plants called for 13,449 sorties, 452 bombers in 35 days; rubber targets needed only 288 sorties in 11 bombers and also required 35 days. By way of contrast, oil targets in Japan were estimated at 7920 sorties with 16 B-29s and 105 B-17s in 60 days while rubber was fixed at 1320 sorties, using 3 B-29s and 19 B-17s also in 60 days. Ibid., Part II.

tempered no doubt by reality of early conflict. AWPD-1 had called for B-29 and B-36 aircraft which were on the drawing boards at the time. The more recent plan took cognizance of the fact that these planes were some distance in the future, certainly not available in 1943, and placed more emphasis on the B-17. The strategic philosophy remained nearly the same, but the targets were changed to aircraft, submarines and transportation, followed by electric power, oil, aluminum, and rubber. There was a resigned acceptance by the planners of air power basically preparing the way for a ground invasion of the continent. This was in direct contrast to AWPD-1 which confidently stated the Air Corps Tactical School dogma of so destroying German industry and morale by aerial bombardment that the Third Reich would surrender without a ground invasion. AWPD-42, on the other hand, more soberly realized the necessity to establish the aerial superiority required to carry out ground operations. The strategic targets and their priority listing in AWPD-1 came close to what the Strategic Bombing Survey felt after the war would most quickly have reduced German industrial potential, but those listed in AWPD-42 reflected the demands and experience of our British allies and were the ones initially put into effect. It seems ironic that the AWPD-1 prediction of defeating Germany from the air alone did not come true, while the defeat of Japan, not considered in the -1, was without doubt hastened by the horrible toll exacted when the B-29s and the atomic bomb came along making a bloody invasion unnecessary. By

then many land and sea battles had been fought to move the AAF close enough to mount the strategic aerial bombardment that finally defeated Japan without the anticipated costly invasion.

Yet, despite its talk of preparing for a ground invasion, the theoretical habits and dogma of past years died hard, and a statement was included in AWPD-42 to the effect that, "it is perfectly feasible to conduct precise bombing operations against selected precision targets, from altitudes of 20,000 to 25,000 feet, in the face of antiaircraft artillery and fighter defenses."[15] Rightly or wrongly, AWPD-42 was to become the second most important planning document for the Army Air Forces in World War II, and, as such, shares in the discussions and blame-fixing for incorrect target choosing. Once again, it must be said in defense of Anderson and the others, that what appeared to be the best target after the war, did not necessarily wave a red flag at the planners in mid-1942. The fact remains that the Anglo-American strategic air campaign based upon these plans and the Casablanca-ordered Combined Bomber Offensive marked the first significant effort to do something drastic to an enemy other than defeat his forces in land or water combat.[16]

All was not happiness when AWPD-42 was released among the

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[15] Ibid., Tab C, "Bombing Accuracy." See also R. F. Futrell's Historical Study 139, Chapter IV for an excellent detailed discussion of AWPD-42; Craven and Cate, Vol. II: Europe, Torch to Pointblank, passim.

[16] Historical Study 139, pp. 244-45.

services for coordination. The Navy, seeing the increased production of aircraft as competition for the building of their ships, rejected the Plan completely. By November 1942, the President accepted a compromise of only 107,000 planes instead of the 130,906 advocated in the original plan. At the same time the Navy received a go-ahead on most of its desired aircraft carriers and other naval construction.[17] By this time more governmental agencies had studied the Plan in greater detail. As almost always happens, there was a rising chorus of criticism, especially in the choice of strategic targets and the priority given to them. At the time of its completion in September, the target selection was based upon the best information available. Subsequently, a group of civilian analysts gathered together in Washington for the purpose of taking a careful look at strategic targets and points of weakness in the German economy. This group came to be known as the Committee of Operations Analysts. The COA, in their report, agreed with Kuter, Anderson, Hansell, et.al., by placing aircraft as the number one target. The British displaced this with submarine pens, no doubt due to the more immediate menace to themselves. Neither accepted the original target selection of AWPD-1 which listed electric power and transportation first. Due to the COA and the British, the Casablanca agreement in January of 1943 listed as final priority submarines, aircraft plants, and transportation.[18] Considering the highly theoretical calculations which

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[17] Craven and Cate, II, p. 293; Historical Study 139, p. 198.

[18] Craven and Cate, II, pp. 353-69.

the Kuter, Anderson, Hansell team had to make, the remarkable sameness of the operational plans of 1943 to the AWPD-42 reflects exceptional credit upon the earlier planners.

Anderson, meanwhile, had been busy on other things. Almost from the day he had arrived in Washington, he had been called upon to draw up plans dealing with Army Air Force activity in the Pacific area. His previous assignment, the Air Corps Board, did not make him an expert in this field, but his work once he arrived there soon put him in nearly that category. By the summer of 1942, the outlook in the South Pacific was bleak. The Philippines had fallen and General MacArthur was engaging Japanese troops in the southeastern part of New Guinea in a desperate holding action while he built up his strength in Australia. Final plans of battle had not been made in Washington when MacArthur, with two American infantry divisions under his command, proposed to leapfrog forward up the northern coast of New Guinea to take the important port of Rabaul and block Japanese resupply to the Solomon Islands. The Navy, already wedded to a plan of its own, disagreed, preferring to island-hop across the Central Pacific towards the Philippines establishing bases as they went. Anderson, in Washington, had prepared a plan similar in almost every respect to MacArthur's emphasizing the development of air bases in northern Australia and gradually up the New Guinea coast until, with aerial supremacy over the approaches to New Britain, Rabaul could be reduced to rubble and the Japanese

shipping lanes successfully interdicted by land-based (Air Forces) bombers. The Navy again objected and insisted on operations in Tulagi culminating in the invasion in August of Guadalcanal. This cut down the number of troops available to MacArthur for his land operations as well as planes for the Fifth Air Force which flew aerial support for his forces. Nevertheless, operations based upon MacArthur's plan and Anderson's subsidiary efforts did take place over the next year. History records that, while the fighting took place in miserable conditions, and planes had to be maintained in the barest of field conditions, operations based upon these two plans were successful.[19]

Once again Anderson found himself at a disadvantage as Chief of the Plans Section and just a Colonel when all the other staff agency heads with whom he dealt were two- and three-star generals. During a briefing he communicated this difficulty to General Arnold. He was not asking for the rank for himself, but simply informing the General that whoever was in his position was at a disadvantage unless he wore at least one star. A short time later, on 18 September 1942, orders were received promoting Anderson to Brigadier General. He and Mrs. Anderson joked later about the fact that he was probably the only Air Forces officer who simply asked for his rank and was given it. Later the next month, Anderson was plunged into talks with his counterpart

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[19] Craven and Cate, I, pp. 472-74. Anderson's draft memo covering the plan and forwarded to the Chief of Staff is dated 25 June 1942.

in the RAF over the question of the role of the heavy bomber in the war in Europe. This was still an untested point at this early stage in the war, and much discussion would go on before a clear dictum was issued at Casablanca to set in motion the Combined Bomber Offensive.[20]

As the plans conceived by Anderson for the expansion of the Army Air Forces took effect from mid-1942 through early 1943 there was a shortage of experienced officers to exercise command positions in the new combat units being created. This was nearest and most dear to Anderson's desires and he occasionally expressed to General Arnold and Major General George E. Stratemeyer, the Chief of the Air Staff, his desire to leave Washington and assume a command position. Each time he was politely refused with the general statement that his experience was too valuable right where he was. His work was outstanding as attested to by the letter from Brigadier General Laurence S. Kuter, who, upon leaving his assignment as Deputy Chief of Air Staff, wrote Anderson to thank him for his assistance and to praise his ". . . superior personal qualities and professional achievements in your Division during the past eight months . . . ."[21] So Anderson stayed on in Plans, not dissatisfied with the job at hand, or its great importance, but nonetheless anxious to get into the actual testing of the plans and dogma of which he

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[20] Ibid., p. 297. Also Letter, Anderson to British General Staff, 12 March 1943, a copy of which is in the National Archives, Box 567, AFCF 380-D.

[21] Letter, General Kuter to Anderson, 24 October 1942, file "Personal Correspondence," Archives 168.7006-1.

had been such a part.

One of the most difficult problems to find its way to the Plans section was the solution to the excessive number of planes lost during ferrying operations from the United States to England. Anderson set to work on the subject and forwarded to the Chief of Staff in February 1943 a detailed plan for search and rescue operations across the North Atlantic ferry route. Not only did he draw up the plan but he submitted draft orders necessary to implement the procedures which he had devised. The plan was adopted and placed into effect almost immediately.[22]

Anderson had become known in Washington as a clear and logical thinker, one who more often than not abandoned the tried and true cliches by simply asking "why?" An answer acceptable to him had to be based upon as sound a reasoning as information available would allow. He was not reluctant to speak his mind, often with careless disregard for the interests and concepts of others. Both of these traits followed him throughout his career helping to make of him a distinguished combat planner and effective teacher, but creating some enemies along the way. In June of 1943, General Arnold finally released Anderson from his Plans assignment with orders to make a tactical inspection of the theatres of war and report back to him. General Stratemeyer wrote to Anderson in a letter that caught up to him in England, of his high

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[22] Memo, Anderson to Commanding General, AAF, 23 February 1943, National Archives, Box 563, AFCF 373.4-A.

regard for his spendid work and personal support.

> During this time your work was a substantial contribution to the development of plans for those operations which today are materializing so successfully. With great care and thoroughness you prepared studies and critically examined the many complicated problems involved in using our Air Forces most effectively. You may be proud of the excellent job you have done . . . .[23]

Anderson was proud of his work and he had every right to be. He had been one of the chief architects of the two basic plans of the Air Force by which World War II in the air would be fought. Analysis after the war would reveal that these plans were exceptionally good, even remarkable, given the lack of data and experience upon which to base the operations of an essentially untried weapon. There was still much to be done, however, and Anderson boarded a plane in Washington bound for London.

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[23] Letter, Stratemeyer to Anderson, 21 July 1943, file, "Awards" Archives 168.7006-5. In December 1944, Stratemeyer wrote Anderson again congratulating him upon receiving his second star and stated, "No one knows better than I do about the fine work that you did back yonder in Washington when I was Chief of the Air Staff." File, "Congratulations, Letters and Messages," Archives 168.7006-21.

CHAPTER V

WORLD WAR II--DIPLOMAT AND AIRMAN

The United States was committed to seeking first the defeat of Germany before it tackled, at full strength, the Japanese expansion in the Pacific. This policy, agreed to at the first of the ABC conferences in Washington, D.C. on 29 January 1941, was to cause the United States considerable grief and loss of territory in the Pacific before the miracle of production the American economy was to bring about in World War II was sufficiently underway to supply both theaters of combat. At this late January conference, the British and American staff members had agreed that Germany would be the predominant member of the Axis triad and, as such, must be defeated first when America entered the war. To accomplish this awesome task, all branches of the service were pressed into action in the European theater. The combined navies would convoy supplies to beleaguered England, and, later on, to even more desperate Russia; the allied air forces would continue and increase many times the campaign of strategic aerial warfare which the British already had underway at the moment; after which the combined land armies would

launch a land invasion without which, the ABC conferees agreed, the German nation could not be defeated.[1]

It was one thing to declare such things when one party to the conference was not yet at war; it was quite another to put the principles into the hard reality of action as unprepared for global war as was the United States. Indeed, the first year of the war for the United States came and went without high-level, coordinated planning for one facet of the overall strategic plans--the strategic air offensive. There is no place in this chapter for the problems facing the naval and ground forces, but they were in a large measure, very similar. In Africa, Operation TORCH, the invasion of North Africa, had succeeded not only in placing that strategic area under Allied control, but in spreading the aerial efforts of the Allies over a vast area of Europe and the Mediterranean. The directorship of this far-flung aerial armada rested with the various commanders, British and American, in England, North Africa, the Middle East and of course, in Washington. What was needed, General "Hap" Arnold wrote to Sir Charles Portal, Chief of the British Air Staff in London, was a unified aerial commander. North Africa, he told Portal, had confirmed suspicions he already held that the air war against the Axis powers "should be unified under the command of one supreme commander. At the present time we are carrying on an air war against Germany and Italy by more or less unrelated air efforts

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[1] Craven and Cate, I, p. 136-37.

from the United Kingdom, North Africa, and the Middle East. Our efforts are being opposed by a very efficient air force, integrated by a very capable supreme air commander, Goering."[2]

The infant Eighth Air Force, destined to be the AAF's instrument of strategic power in Europe, had just begun operations at the time of the Casablanca Conference in January 1943. The first B-17 raid of the Eighth was a moderately successful one on Rouen, France, on 17 August 1942 and consisted of only twelve planes. The number of planes rapidly doubled and then tripled as B-17s began to arrive in England; however, it was still a British show primarily. Wherever possible, and within their range, the British provided fighter escort for the B-17s with the indomitable Spitfires although the American adherents to the strategic bombing doctrine felt such escort was not really necessary. The cooperation between the two air forces was superb, but the coordination, simple at first, rapidly grew very complicated and time consuming. It was painfully clear that as the aerial forces grew in size and accelerated their activity, there would have to be a source of active coordination between them, particularly in the area of target choice for bombing missions.

This inadequacy of aerial command was very much in the minds

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[2] As quoted in Craven and Cate, II, p. 283-84. The Arnold letter was written 10 December 1942. Anderson took strong exception to Arnold's estimate of Goering, heaping scorn upon the Nazi leader's narrow thinking. Arnold does not vilify the Luftwaffe Chief in his book Global Mission, but he does criticize him for mistakes made.

of the British and American leaders when they met at Casablanca in January 1943. Yet, with the agreement that a combined British-American strategic air offensive, code named Operation POINTBLANK, should be launched upon the German nation in preparation for an all-out land invasion, no orders were issued setting up a combined air staff to organize and carry out the offensive.[3] The directives, clear in their demand for an air offensive of huge magnitude, were vague in terms of specific commitments and detailed objectives. It was June 1943 before the specifics were ironed out, and the machinery was at last under way.

Not until May 1943 did the Eighth Air Force begin to acquire a bomber and fighter force equal to the task that had been assigned to it by the Combined Chiefs of Staff by virtue of their 21 January 1943 Casablanca directive.[4] Major General Ira C. Eaker, Commander of the Eighth Air Force, presented a plan that combined the operations of the AAF and the RAF in a very general way. According to his plan, which the JCS approved with little objection, the air forces of the two nations

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[3] Charles B. MacDonald, The Mighty Endeavor (New York: Oxford, 1969), p. 228.

[4] The Casablanca Conference differed from AWPD-1 target priorities somewhat in setting the following criteria: "the progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened." In order of priority the primary bombing objectives were (1) German submarine construction yards, (2) German aircraft industry, (3) transportation, (4) oil plants and (5) other German war industry. See Craven and Cate, II, p. 305.

would mutually complement each other in prosecuting the aerial war on the German homeland industries. By this he meant the AAF by day and the RAF by night. No attempt was made to establish or define the major effort of the RAF, this was left to them and it is doubtful that the more experienced RAF would have allowed it any other way. It was, however, clearly suggested in the plan that "when precision targets are bombed by the Eighth Air Force in daylight, that effort should be completed by RAF bombing attacks against the surrounding industrial area at night."[5]

The American JCS passed Eaker's CBO plan to the Combined Chiefs' meeting in Washington on 14 May 1943. On the 18th the CCS approved the plan agreeing that the aerial offensive should culminate in a cross-channel invasion on or about 1 May 1944. It then became the duty of Sir Charles Portal, the agent of the CCS for the direction of the bomber offensive, to issue the order of implementation on 10 June 1943 that legitimatized an aerial war already under way. To order a thing begun was one thing; the problem of bringing the directive to operational status was yet another, quite complicated, task. Once again General Arnold took up the cause for more centralized command. As he had in 1942, he wrote Sir Charles Portal suggesting that there be created ". . . more formalized machinery for the closest possible coordination, or rather, integration of the two bomber efforts." Arnold went on to

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[5] As quoted in Craven and Cate, II, p. 371. General Eaker's CBO plan ultimately became the famous Combined Bomber Offensive order issued 10 June 1943.

suggest a permanent committee be established for this purpose.[6] So it was that a separate directive was issued by Portal on the same day establishing the Combined Operational Planning Committee (COPC).

The COPC was essentially a small body of air officers representing the operational commands of both nations' air forces. Permanent members included representatives from the RAF Bomber and Fighter Commands, and the American VIII Bomber Command, VIII Fighter Command, and VIII Support Command. A British Air Ministry member of the Directorate of Bomber Operations was to be available as needed.[7]

For once the duties of an Allied Committee were reasonably well spelled out. Together the air representatives were to plan missions of strategic value over Germany, guided by the criteria set forth by the CBO directive, after which they were to coordinate the tactical plans for any combined operations involved. This might range from RAF fighters in escort to Eighth Air Force bombers, or a round-the-clock pounding of some important target, the Americans by day and the RAF by night. The plans were to be made well in advance of the actual mission, and after the operation had been flown, the COPC was to

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[6] Letter, Arnold to Eaker, 22 April 1943 as quoted in Craven and Cate, II, p. 374.

[7] Interview, Brigadier General Anderson by Lieutenant Colonel C. O. Hahn, 10 November 1944, p. 1. Transcript in file "Interviews with General Anderson," Archives, 168.7006-2. Hereafter cited Interview - Hahn.

analyze critically the results. The planners were exempt from any operational responsibility in the actual conduct of the missions; they were to perform as a planning and advisory body only, leaving the execution to others. Since the originators of the COPC had the American daylight offensive primarily in mind, the Committee became, in effect, "merely an additional means of liaison with the Americans on any tactical questions which might be common to both."[8] It did ease Arnold's concern in the vital area of coordination between the aerial forces of two sovereign nations. To head up the Committee it was agreed that the British would defer to an American to be named in Washington. The job required a man already familiar with the problems of strategic planning, a firm believer in it, and one skilled in the verbal conflict of "give and take." Orvil Anderson was to be that man, but he did not know it at the time.[9]

In retrospect, the assignment to AC/AS Plans from 1941 to 1943 was the maturation point for Anderson. As the schools period had broadened his concepts and opened up intriguing new areas of thought to

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[8] Information supplied by the British Air Ministry and quoted in Craven and Cate, II, p. 375.

[9] Records of Anderson's day-to-day activities and correspondence during 1943-45 do not exist in any one place. To circumvent this, activities which took place at the time he was in England and assigned to the various commands are described, in this and subsequent chapters, from files concerned with the event or the command rather than from his personal files. Considerable historical background, not directly related to Anderson, is included to assist the reader in understanding the events as they occurred.

the ex-balloon pilot, the actual planning for a growing air force involved in a global war was the opportunity to put into practice new ideas along with traditional doctrines. He was clearly aware of the importance of his work and had devoted long and laborious hours to it. These were serious times for the nation, and dangerous moments for the infant air arm. Even at this relatively late date in the fantastically rapid development of the airplane, there were very few of the military leaders outside the Army Air Forces that understood the major role the flying machine stood ready to play. With each plan drawn up there were countless meetings with the Army staff to sell them on the basic premise of airpower and subsequently on the vast possibilities the new dimension promised. Anderson had powerful champions in Arnold, Marshall, Secretary of War for Air Lovett, and others, but there were also many who saw little in the airplane except ground support, and then under ground control completely.

By June of 1943, the initial plans of the air war had been laid, changed, and were under way. General Arnold summoned Anderson to his office and laid before him briefly the problems of the Army Air Forces as he saw them. As the Commander, Arnold could not spare the time to travel to all the far-flung trouble spots where the AAF was located. He was, therefore, sending Anderson, Arnold told him, on an ". . . extended tour of inspection of all theaters both in the European

and Asiatic spheres."[10]

Anderson's orders were a wartime traveler's dream. He was to proceed "on or about 20 June 1943" to LaGuardia Field, New York, and "hence to England, North Africa, India, China, Australia, and South Pacific and such additional places as may be necessary on TDY [temporary duty] for six months for purpose of making a study of organization and needs of tactical air forces and carrying out the instructions of the CG, AAF . . . ." For this trip the highest air priority was granted, he was allowed to carry a camera, a normally forbidden item for a wartime traveler, and he could take along 30 additional pounds of luggage.[11] Many is the military man who would have given up precious things to have been handed such a set of orders. A trip around the world, officially sponsored in such a way that every door would be open to him was an honor and a rarity at the same time--a position usually reserved for those much higher than a new Brigadier General. Years later, during an introduction of Anderson at a banquet, this unusual set of orders was mentioned again. The toastmaster chose to refer to the 1943 trip as a reward from General Arnold for Anderson's excellent work on the Air Staff.[12] Anderson knew differently, and much later

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[10] Interview - Hahn, p. 1.

[11] Letter Order, War Department, Headquarters AAF, Washington D.C. 14 June 1943. File "General Anderson Pay Vouchers," Archives 168.7006-5 and -8.

[12] Dr. Eugene M. Emme in introducing Anderson at a Reserve Officers Association banquet, Maxwell AFB, Alabama, 14 October 1958. Recorded on tape, a copy of which is in the author's possession.

admitted that the real essence of what seemed to be such an excellent assignment was that Arnold, and others whom Anderson's often blunt manner had offended, were fed up with his questioning of basic concepts for something better. As he put it, "I had just been canned."[13]

Like most couples who found themselves with sudden military orders calling for overseas duty, the Andersons were forced to make rapid plans. On the possibility that they might return to Washington after the war, they decided to rent their home. Belongings were either packed for shipment or stored, and the two said good-bye with Mrs. Anderson going west by train to San Diego to stay with her parents who had retired there, and the General flying to LaGuardia Field, New York, where he boarded a plane for points east--the first stop being England.

Following military protocol, upon his arrival, Anderson called on Major General Eaker. In their conversation Eaker discussed the Combined Bomber Offensive and its problems especially in working closely with the British. The Combined Operational Planning Committee (COPC) had been established the same day the two met, 10 June 1943. It was temporarily headed by a British officer, Air Commodore A.C.H. Sharp. How would Andy like that job, Eaker inquired? According to Andy, "I cancelled my extended tour, got authority from Washington,

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[13] Air War College speech, "Development of U.S. Strategic Air Doctrine, ETO, World War II," 20 September 1951. Archives, K239.7162-6.

and accepted this assignment here in the United Kingdom."[14]

Early in July, formal orders were cut assigning Anderson to the Eighth Air Force with duty as Chairman, COPC. It was a full-time job initially, and a unique one in that he worked closely with, but in a semi-detached status from, the operations section of headquarters, Eighth Air Force itself. It seems safe to assume that Andy liked the job, and relished the challenge it presented. He remained as Chairman, although he later assumed other duties, until 3 April 1945, when COPC was disbanded.

The Committee Anderson headed had, again in his words, "the mission of planning bomber operations involving participation of the various commands in the theater and furthering the combined bomber offensive."[15] General Eaker described the functions as that of "planning the operations against the major targets as outlined in AWPD-1 and its subsequent refinements." After completion, the COPC plans were submitted to the various commanders concerned, and after "approval by the Eighth Air Force Commander, they were given code names and filed at each Allied operating headquarters against future need. When the VIII Bomber Commander, at his daily operational conference, selected one of these targets for attack, the code name was

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[14] Interview - Hahn, p. 1. Also Special Orders No. 187, Hq Eighth Air Force, 6 July 1943, file "Special Orders - Miscellaneous," Archives 168.7006-8.

[15] Interview - Hahn, p. 1.

immediately passed to all Allied commands and the operational plan previously prepared was put into effect."[16]

In addition to the purely planning functions of the COPC there was the vital one of coordination. This became all the more important when weather, a change in the number of aircraft involved, or in the target to be hit would force alterations of the previously coded and approved COPC plan. When this occurred, it was the task of Anderson's committee to secure the complete coordination of all commands and commanders involved. As nearly as can be determined, it is for this function that the COPC earned the nickname "Jockey Committee." Any slip here might result in fighters failing to find the bombers they were to protect, bombers unable to land at home base due to what was commonly called "zero-zero" weather, or the entire formation of bombers flying over a newly set up German anti-aircraft area with the resulting heavy casualties. The COPC was the pivot around which missions were adjusted and times and target priorities altered. It was not a perfect organization, for, as previously noted, it was geared primarily for the American daylight operations, and its effects were felt there more than in RAF circles. Some felt there was still not enough coordination on target selection for

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[16] Eaker, Ira C. Lieutenant General, "Report on Eighth Air Force Growth, Development and Operations 1 December 1942-31 December 1943." The report is dated 31 December 1943. Archives 520.101A. General Eaker's words need to be qualified slightly in that the COPC code name was assigned at the time the plan was initially drawn up. Letter, "Organization and Administration of the Combined Operational Planning Committee," dated 11 July 1943, p. 2. Archives 508.201A.

Operation POINTBLANK, as the Combined Bomber Offensive was now coded. Yet the COPC was a big step, and the only such organization, in the right direction and it served a valuable purpose in planning and coordination.[17]

In all fairness to the hard-working planners of Anderson's committee, it must be stressed that COPC was advisory and not charged in any way with the authority of execution. Hence, the best of plans which their collective minds could devise might be, and were on occasion, completely ignored. "The COPC today serves as a well--a carbuncle--or sort of a lion running around loose without a head," said Anderson. "We are charged with working up plans and then selling them to about five interested Command agencies. Now, if they all agree, then we will come in. We don't take it to a Commander; we take it to a series of Commanders of various elements that should work together for efficient operation."[18] An example of this is the frantic planning done to counter the German introduction of the V-1 rocket bombs in June and July of 1944. Allied intelligence knew of the V-1 bomb and had some idea of its potency, but they were unprepared for the savage onslaught which Hitler unleashed shortly after D-Day. Detected in aerial

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[17] Craven and Cate, II, p. 741.

[18] Letter, "Organization and Administration of the COPC," 11 July 1943, p. 1. Archives 508.201A. Also interview, Brigadier General Anderson by Dr. Bruce C. Hopper, 24-25 September 1943, file "Interviews with General Anderson," Archives 168.7006-2.

photographs in May 1943 and coded CROSSBOW the following December, the V-1 and its more potent descendant, the V-2 rocket, marked one of the few failures in what may, in the large perspective, be termed excellent American-British cooperation. By virtue of the fact that the British failed to notify the Americans of the potential "buzz-bomb" threat, no plans were available for counterattacks when the first German "torpedos with wings" hit London in the early morning of 12/13 June 1944. Once the full threat was understood, the COPC under Anderson met in lengthy sessions to study the matter and decide upon an aerial counterblow. The longer the problem was studied the more apparent became the fact that all too little was known about the launch sites. Preliminary attacks against the "ski type" launch rigging had been of little avail. It was the final recommendation of COPC on 21 July 1944 that "no specific plan could be guaranteed to do more than prevent a rise in the scale of V-rocket firings, and recommended that all attacks on launching sites be suspended in favor of attacks against the weapon's production centers in Germany, on storage depots, and against ground transportation supporting the V-1 offensive."[19] The Americans favored a carefully worked out, and thoroughly tested, plan involving fighter-bomber attacks, while the British clung stubbornly to the concept of large-scale bombing to destroy the launch sites. In the end, neither did the job, and the famed Nazi weapons were stopped by advancing

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[19] Craven and Cate, III, p. 526ff, 536.

Allied troops. This marks one of the few times that COPC recommendations were either ignored or went unacted upon.

It would be unfair to Anderson's committee not to present a more typical side of their operations. During early 1944, it became increasingly evident to the Allied air leaders that if the invasion of the continent was to proceed on something approaching the established schedule (May) a greater, more concentrated effort was going to be necessary. Not only was it necessary to have such an all-out effort, but the targets would have to be the German aircraft industry. Knock this out, and the skies over Europe become Allied. Under such a canopy the armies could invade successfully. Under anything less than complete aerial control, the invasion had a slim chance of success. Early in December 1942, General Arnold had appointed the "blue-ribbon" Committee of Operations Analysts, consisting of industrial experts, to rectify the deficiencies found in target analysis of AWPD-42. The group agreed shortly that the German aircraft industry was the prime target for POINTBLANK.[20] Acting upon the work of this committee Eaker had made his report that became the basis of the Combined Bomber Offensive Directive.[21] In November 1943, with COPC barely under way, Anderson charged its members with the preparation of missions to augment the CBO plan to destroy Germany's air industry.

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[20] Ibid., II, pp. 353-57.

[21] Ibid., pp. 366ff, 370-74.

COPC formulated, drafted, changed and rechanged a plan for a massive assault on the Reich's aerial industry. Code named Operation ARGUMENT, the plan sent the Eighth and Fifteenth Air Forces (the latter out of Italy) on a series of coordinated raids into central and southern Germany, the location of most of the aircraft assembly and airframe plants. The RAF agreed to schedule its night area attacks to coincide with the American day effort. By February 1944 the necessity to destroy German fighters had become so urgent that General Arnold lost patience with the air leaders in Europe. Bombing losses were high, morale was sinking and the results of the attacks left many of the targets to be hit again. Arnold wrote to Spaatz, ". . . what does concern me is the idea of pecking away at the German aircraft industry. Can't we, some day, and not too far distant, send out a big number--and I mean a big number of bombers to hit something in the nature of an aircraft factory and lay it flat?"[22]

COPC, and the various agencies of both air forces agreed in advance that the all-out push would be costly, but if the German air

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[22] Letter, Arnold to Spaatz, 24 January 1944, Microfilm reel #51, USAF Archives. Such microfilm reels will hereafter be cited as "Reel # __, Archives." This is an astounding question in its implication. The leader of the only air force to espouse high altitude, daylight, strategic bombardment, and who often claimed that air power was essential to the winning of the war, and possibly could win it alone, was now admitting near defeat. He, at best, tacitly acknowledges that the AAF had yet to perform the mission given it satisfactorily. In this one remark can be read the sense of frustration and disappointment felt by most of the top air leaders in the dark days of late 1943 and early 1944.

force could be crippled it would be worth it. The attacks actually began in January 1944, but the efforts were relatively small. The costs, on the other hand, were very high. The First Air Division of the Eighth plus the lead combat wing of the 3d Division bombed Oschersleben, principal center of German FW-190 fighter production along with other targets close by. Because of weather the 2d Air Division had been recalled from the raid along with trailing elements of the 3d. The remainder of the original 663 plane formation was too far inland to abort the mission and elected to continue to the target as planned. In all, 238 planes bombed that day, and the Luftwaffe rose in strength to meet them. In the largest air battle since the famous and bloody raids against Regensburg and Schweinfurt on 14 October 1943, the German fighters shot down 60 B-17 bombers.[23]

With such losses there remained little doubt in the minds of the Allied air leaders that German aircraft plants had to be put out of business. As bad weather closed in over the continent for most of the remaining days of January and early February, Major General Carl A. Spaatz, now head of United States Strategic Air Forces in Europe (USSTAF), a new organization established in January 1944 to control all AAF forces in the United Kingdom made major changes in his command. Major General (later Lieutenant General) James H. Doolittle assumed command of Eighth Air Force, now under USSTAF. Doolittle,

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[23] Craven and Cate, III, pp. 22-24.

in turn, called on Anderson to assume a dual role--retain his chairmanship of COPC while assuming the primary duty as Operations Officer of Eighth Air Force. The latter function he assumed by verbal command in February 1944.[24] His new job meant that Anderson, in addition to conceiving and planning the bombing missions as chairman of COPC, now ordered that same mission carried out in detail by the Eighth Air Force.

The continuing bad weather over both Europe and the Allied bases allowed the Americans time to reorganize their administrative establishment. By mid-February there were indications that the weather was about to clear. Major General F. L. Anderson of USSTAF operations ordered the attacks on German aircraft industries to get underway in earnest. Out of the target files came Anderson's COPC-planned mission COPC/S.2088, code named MAIDENHAIR.

It is difficult to attribute wartime actions that involve several men, as did COPC, to any one man. For this reason alone, if for no other, commanders must take the blame as well as the credit for the actions of those under them. In a group representing two sovereign

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[24] Ibid., II, pp. 754-55. The administrative reorganization created a small problem of names. General Spaatz chose as his Deputy Commanding General for Operations (USSTAF) Major General Frederick L. Anderson, a highly respected airman, but not related to Brigadier General O. A. Anderson who held a similar job and later title in Eighth Air Force. The former dealt in plans, while the latter actually planned the missions flown. General O. A. Anderson enjoyed the somewhat unenviable task of planning broadly a mission as Chairman of COPC and then replanning in minute detail and executing the same plan in Eighth Air Force.

nations, both "blessed" with the key that would open up Fortress Europe from the air, it is even more difficult to determine individual authors. So it is with the COPC plan, MAIDENHAIR. The chairman of COPC, General Anderson, is given the credit for the careful planning and excellent results obtained, and rightly deserves it.

The original outline of the plan to bomb the German aircraft works deep inside Germany was assembled by a Colonel Marchmeyer on 16 February 1944. After the initial draft, the plan was passed to Flight Lieutenant C. E. Bemrose of the COPC Intelligence Section for review and comment. Having passed careful scrutiny, the plan was approved by Anderson and his senior staff and a three-page resume was prepared and distributed to the headquarters of all the participating air units of both countries. Each headquarters received the copy on 19 February and was asked to forward comments or approval as soon as possible.

The plan was set forth on a detailed map of Northern Europe upon which had been drawn, in various colors, the routes of the heavy bombers both into Germany and out again. The routes themselves caused no great concern apparently, nor should they for they were marked over areas of slight flak concentration and around known Luftwaffe fighter bases. The deepest penetration of the mission was to reach factories in Leipzig and two towns close by, Bernberg and Aschersleben. At the time of the raid Leipzig was estimated to assemble over

33 per cent of all the dreaded Me-109 fighters. It was, in view of the renewed importance now being placed upon the destruction of the German air force in time for the scheduled invasion, the most logical of targets to hit despite the distance the heavy bombers would have to fly.

As planned, MAIDENHAIR contained one feature which was not accomplished. The mission in its original form contained a route for three groups of heavy bombers (98 B-17s) across the North Sea and the neck of Denmark, then south and east to Poznan and the aircraft works there. Once the groups on this route had dropped their bombs they could return to England or proceed on east to an unidentified Russian base in what would have become the first shuttle raid of the war into Russia. In fact, it was in response to a request for a plan to conduct such a shuttle raid, along with the current priority of the aircraft assembly plants as targets, that the plan was first begun under Anderson's order.[25] As conceived, the northern bomber group would alert the German fighters in that section and have several squadrons scrambled to intercept them. Just prior to the interception, the Germans would begin picking up the signals of the other two bomber forces advancing across the continent toward the very heart of Germany. The COPC, realizing that the Germans would do everything in their power to protect their in-

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[25] The first shuttle mission into Russia was flown by the Eighth Air Force on 21 June 1944 after an attack on oil plants at Ruhland. The American bombers landed at Poltava and were attacked on the ground by German aircraft. The resulting heavy losses plus Russian intransigence made shuttle bombing to Russia considerably less desirable.

dustrial heart, was banking on the fact that the scrambled fighters would be diverted to meet the larger force, thereby allowing the Poznan groups to go relatively unmolested. Because of this, very little fighter escort was assigned to these bombers. To make doubly sure that the Germans concentrated all their fighter strength against the two southern routes into Leipzig, the Fifteenth Air Force was tasked to fly four combat wings out of Italy to hit the city of Regensburg and the huge (37 per cent of the total) FW-109 assembly center there. They were to have fighter support, but for numbers the plan simply stated "as available."

As actually run by the Eighth Air Force on 20 February 1944, MAIDENHAIR worked to perfection--only weather intervened to cancel the northern group. The First Air Division committed 314 B-17s along the North Sea route and across Denmark. Just below the southern tip of Sweden, while over the Baltic Sea, the pathfinder aircraft reported the weather too bad to allow the continuation of the mission and the Division returned to England, bombing targets of opportunity (Rostock and Tutow) along the way. True to the COPC thinking, however, the northern bomb group had drawn German fighters from as far south as Berlin. When German radar detected the huge force approaching further south, the already airborne fighters were diverted to another intercept point. To reach this area, however, it was by then necessary for the fighters to land for refueling. At this crucial moment the American First and Second Air Divisions passed overhead toward their targets along with

their P-38 fighter escort, some of which were diverted for strafing the temporarily-grounded German fighters.

The task force of the First Air Division (432 B-17s) passed over Great Yarmouth and the Channel headed for Amsterdam. At this point they were joined by four groups of P-47s which would escort the bombers halfway into Germany at which point they would be met (just south of Hannover) by two groups of P-38s which would take the bombers all the way to the target and return. Twenty minutes after the First winged out over the Channel, the Second Air Division (144 B-24s) passed over Southwold headed for Amsterdam. There one group of P-47s met them and escorted them to approximately the same area as the First Division at which point one group of P-38s met them and took them to their targets, the assembly plants at Gotha and Brunswick. On the return trip, when the bombers would be vulnerable to a second German fighter attack, two groups of P-51s and eight groups of P-47s linked up with the main force providing welcome withdrawal cover. Both Divisions followed the same withdrawal route, crossing the Rhine south of Cologne to avoid the heavily defended Ruhr industrial area. At the coast of Holland fifteen squadrons of RAF Spitfires linked up with the bombers and provided escort to the home bases.

Nor was this all the activity on the 20th of February. There were diversionary strikes by 36 Mosquito bombers on an enemy airfield near Elde, Holland, and some 216 B-26 medium bombers ranged across

Holland and Belgium in attacks on airfields to confuse the enemy and make interception of the main force all the more difficult. As if this was not enough, 48 B-25s, and the same number of A-20s were joined by 36 RAF "Bomphoons."[26] All the planes except the Mosquitos and the Bomphoons had additional fighter escort. The entire mission amassed 1110 heavy and medium bombers, 18 fighter groups and 40 individual squadrons of fighters. Of the latter two, many planes flew two missions that day. It was an awesome display of airpower that did just what the COPC planners hoped it would do, hit the target and confuse the enemy observers until it was too late to act.

In retrospect, the raid of 20 February 1944 was a huge success. It began the ARGUMENT raids with a resounding success. The period of weather-enforced inactivity was broken in such a manner that the Germans were made unquestionably aware of the aerial war at hand. MAIDENHAIR proved beyond a doubt that shuttle raids were possible given decent weather, that the German defenses could be confused, and that the Eighth Air Force could bomb targets much deeper into Germany than the 320 miles flown on the ill-fated Schweinfurt raid of 17 August 1943. Until this attack on Leipzig, that raid had been the deepest penetration, but the record was not long in being broken again. Less than a

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[26] A modified version of the Hawker Typhoon fighter which carried two 1000 pound bombs. While not an outstanding fighter, it did a creditable job destroying German radar stations, in close support and in raising havoc on enemy airfields. Thetford Owen, Aircraft of the RAF Since 1918 (New York: Funk and Wagnalls, 1968), pp. 326-29.

month later, on 19 March 1944, the Eighth hit Munich, 450 miles deep into the heart of Hitler's cherished Bavaria. The Luftwaffe was plainly notified that its aircraft industry was under consistent attack. The week of extensive operations, later to be dubbed "Big Week," which lasted from 19 through 25 February 1944 marked the turning point in Allied aerial operations. The largest aerial armada to date in the history of the American strategic forces had surpassed in distance and size the bloody raid on Schweinfurt and had done so at the cost of only 21 bombers on its first raid.[27] On this raid the bombing results had been good in some areas, excellent in others. In one plant near Leipzig a month's output of fighters was lost due to bomb damage, and a movement was begun throughout the German aircraft industry to disperse all its plants. It was this dispersal that saved the productive output, and allowed the industry to actually show a greater output after the Big Week raids than before.[28]

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[27] Out of 900 fighters launched only four were lost. Eighth Air Force claimed 126 German fighters destroyed, 40 probably, and 66 damaged. Of the 126 shot down bomber crews claimed 65 and fighters the remainder. Caution should be exercised in accepting battle claims as final, for events often proved them exaggerated. Eighth Air Force Tactical Development August 1942-May 1945 (U.S. Army publication July 1945), p. 129. Hereafter cited as Tac. Devel. This book was supervised in its preparation by Anderson who received lavish praise for it from General Arnold.

[28] The description of the MAIDENHAIR mission is based upon a copy of the actual plan in a folder entitled "Draft Plan - Maidenhair" Archives 508.401; on a recapitulation of the mission in Tac. Devel., pp. 25-27, 126-29; and on Craven and Cate, III, pp. 30-34. The "Maidenhair" plan was a refinement of earlier plans "Portmanteau" 10 August

The launching of the raid had been a touch-and-go situation right up to the night before due to bad weather. It was this same bad weather, plus the desperate need for all aircraft in support of the Anzio beachhead, that scrubbed the Fifteenth Air Force participation at the last minute. Having committed themselves on such a monumental scale, there was nothing for the air leaders to do but wait. The early reports of the raids were greeted with sighs of relief in headquarters in Europe and all the way to Washington. General Spaatz, under whose overall leadership the mission was flown, praised the planning of COPC when he said that its "planning of the entire operation of 20 February 1944, in which over 1000 heavies were dispatched, alone justified the existence of the agency."[29] As a matter of historical accuracy, it should be mentioned that the date on which the draft plan of MAIDENHAIR was distributed for comment to the various commands represented on COPC was 19 February 1944. The mission, as detailed, was flown on the morning of 20 February. This would have allowed an impossibly small amount of time for the actual planning of the myriad of details associated with

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1943 and "Aeration S.2087" 8 February 1944. Folder "COPC, Code Name for Targets" Archives 508.400A. Having been flown as planned on 20 February 1944, "Maidenhair" was declared cancelled on 4 March 1944. File, Headquarters Eighth Air Force, "Combined Operational Planning Committee," Archives 508.400A. Also see MacDonald, Mighty Endeavor, pp. 238-39.

[29] Message, Spaatz to Arnold, 21 February 1944, as quoted in Air Force Historical Study No. 122, "The Combined Bomber Offensive, 1 January 1944-6 June 1944," unpublished study, Air University, 1947, p. 220 fn 7. Archives 101.122.

the mission assuming it had been approved by all commands, for which purpose it was initially sent out on the 19th. Two things point to the fact that it was used although COPC records and Eighth Air Force records do not record a positive tie between the plan of COPC and the actual mission flown. In the first place, an earlier COPC plan (AERATION dated 8 February 1944) planned a mission for the same targets with the exception of the "end run" across Denmark. MAIDENHAIR simply added this excellent deceptive feature, which did not help in bombing results as had been hoped, to the basic AERATION plan. Thus a plan was available for use when the weather broke. Also, Anderson's COPC headquarters was located at High Wycombe, which was also the location of the headquarters of the Eighth Air Force. As mentioned before, since 7 February 1944, Anderson had been serving, by vocal order of Lieutenant General James H. Doolittle, the new commander of the Eighth (General Eaker had been sent to Italy to command the Fifteenth Air Force there), as Deputy Commanding General for Operations of Eighth Air Force. As such he was responsible for the final tactical planning of the actual missions he, as Chairman of COPC, had initially supervised in planning. Thus it was that when the bad winter weather broke suddenly and General Spaatz's USSTAF headquarters called for a mission immediately, Anderson could approve the MAIDENHAIR plan and initiate its implementation as well. By the very nature of his COPC duties he was intimately familiar with all the details of the plan and saw

in it the right mission for the right target at the right time. He could call upon his COPC members to insure the prompt coordination so vital to such a mission. Therefore, while the date of the MAIDENHAIR plan would vitiate against its use the very next day, it was very possible, and indeed, did occur just that way.[30] It is not surprising that Spaatz should send a message to General Doolittle who in turn forwarded it to Anderson. It spoke volumes of the relief of all concerned that the lull in the air war seemed over and that the first major effort had met with such marked success. The message read:

> Desire following message from Lt. General Spaatz be brought to the attention of all members of your comd quote SUNDAY'S GREAT AIR BATTLE WAS A MAJOR CONTRIBUTION TOWARD OUR ULTIMATE VICTORY. THE PERFORMANCE OF YOUR BOMBERS AND FIGHTERS WAS MAGNIFICENT. TO ALL COMBAT PERSONNEL PARTICIPATING IN THIS SPLENDID EFFORT AND TO ALL THE GROUND PERSONNEL WHOSE HELP MADE THIS GREAT FIGHT POSSIBLE, I SEND MY HEARTY CONGRATULATIONS AND MY DEEP APPRECIATION. FOR THE BRILLIANCE AND EFFECTIVENESS OF HIS PLAN FOR ACCOMPLISHING THIS OPERATION I DESIRE TO COMMEND, PARTICULARLY, BRIGADIER GENERAL ORVILLE *[sic]* A. ANDERSON SIGNED SPAATZ unquote I desire to add my own genuine appreciation for a magnificent job well done. Doolittle.[31]

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[30] Interview, Hahn, p. 2; COPC files "Letters--COPC" Archives 508.400A; "Index of Target Names, Numbers and Codes" Archives 508.400A; "A-3 Plans and Operations--COPC" Archives 508.201A; Tac. Devel., p. 129; COPC Draft Plan--"Maidenhair" Archives 508.401.

[31] Message Eighth Air Force F-1984G, dated 23 February 1944. File "Awards, Commendations, and Decorations" Archives 168.7006-5.

As it turned out, the steady bombing of "BIG WEEK" had a serious and lasting effect upon the Luftwaffe of Herman Goering. Once dispersion of the aircraft industry had taken place, plane production rose even higher than before. However, the lull in output during the last of February through March and into April of 1944 gave the Allied aerial forces the break they needed to get ahead in the fight for supremacy of the skies. In opposing the concentrated raids, the Germans lost more than 500 fighters and, more importantly, nearly that many trained pilots. The planes could be, and were, replaced in time, but the skill of the pilots was irretrievably lost since there had been an intentional de-emphasis upon training since the beginning of the war. As the Eighth Air Force switched target emphasis from aircraft plants to oil, a last-minute training effort produced only poorly qualified pilots restricted on the number of hours they could fly for experience due to lack of gas and oil.

As an example of how seriously hurt the Luftwaffe was by the "BIG WEEK" efforts the Americans began noticing that many of their missions went unopposed by the Germans, or that only a token number of fighters would rise to challenge and they would stay out of machine gun range of the American escort planes. Even when the escorting P-51s would actively seek aerial battle, the German fighters would run, preferring to wait for anti-aircraft flak to cripple a bomber forcing it to slow down and be left unguarded by the rest of the formation, at which

time they would pounce. The American fighters on the other hand, in a complete reversal of earlier policy, openly attacked the Germans whenever they could while on escort duty, in an attempt to further attrit the Reich's fighters.

On 6 March 1944 a second American raid on Berlin was attempted (the first raid two days before had been hampered by weather forcing most of the bombers to return to base) by a force of 660 B-17s. American air leaders had expected the Germans to fight for Berlin and they were not disappointed. The Eighth Air Force lost 69 bombers and 11 fighters on this raid and for a while, "target Berlin" was as much a cause of concern among American pilots as it was in Germany. In the debriefings after the first full-scale raid on Berlin, B-17 crewmen and fighter pilots claimed to have shot down 179 fighters. The figure was so high that senior planners at first doubted it. Analysis at the end of the war was able to show with reasonable accuracy that the claim was not far wrong, and the raid had, indeed, dealt the Luftwaffe another blow. This combination of attrition, although admittedly not always so successful, and production slowdown due to dispersal, began a gradual deterioration in German fighter resistance; a decline that was never reversed despite increased production.

By the end of March 1944, the lack of enthusiasm on the part of the Luftwaffe fighters was noticeable. At the time no one was willing to state for sure that the turning point had been reached, yet, in

retrospect, the Allied successes of February and March 1944 can be said to mark a significant peak in the tide of the aerial war in Europe. There were still hundreds of German fighters, including the new, all-jet Me-262, and time after time in the months ahead they would rise to inflict severe losses on the Allies in men and planes. Nevertheless, from the spring of 1944 on, the issue was never in doubt as it had been in the winter just past. To round-the-clock sustained bombing there was no sustained fighter reaction, and where casualties increased significantly on any raid, it could usually be attributed to the increased accuracy of flak. The German fighters, on Goering's order, had been for the most part withdrawn behind the Rhine where they could better defend the Fatherland. This defensive tactic allowed allied fighters with shorter range, such as the P-47, to fly well into the continent before having to jettison their tip or belly fuel tanks. An earlier German attack would have forced all the fighters to jettison to "clean" the aircraft for combat, thereby shortening escort range. No attempt was made by the Germans to attack and disrupt the American bombers in the early mornings as they formed up prior to flying across the Channel on the day's mission. The fault for this had to be Goering's. The lack of German planes in France and the low countries left the German armies without aerial cover and was the prime reason General Eisenhower could state with such impunity to his troops just before the D-Day invasion, "If you see fighting aircraft over you, they will be ours." This was the objective

of Operation POINTBLANK to begin with, to so severely deal with Germany from the air that the invasion by land would be aided through lack of aerial opposition and a weakened nation. There were still those who said that the Army Air Forces, having won the upper hand in the air, could defeat Germany without an invasion. This point can never be proven, and seems not to have enjoyed vast popularity even then. One thing was certain, however, the Luftwaffe had lost aerial superiority to the increasing mass of American aerial might. This meant the Germans had lost the war in the air.[32]

To the entire series of "BIG WEEK" raids which precipitated this decline of the Luftwaffe could be attributed an importance almost equal to that of the results of Gettysburg in the Civil War. For his share in planning "BIG WEEK," Anderson was nominated for the Legion of Merit, a decoration he was to receive later, but not for this event.[33]

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[32] MacDonald, Mighty Endeavor, pp. 238-40; Craven and Cate, III, pp. 51-53, 56-60.

[33] The citation for the award read in part:

> As a result of his initiative, knowledge and diligence, he developed in the planning members of the Committee a sound understanding of strategic and tactical concept in the conduct of air warfare. A series of operational plans for the conduct of the Combined Bomber Offensive was prepared under his direction and guidance. His planning activities culminated in Plan "Maidenhair" which was put into operation on 20 February 1944. This mission, hailed as a most significant air operation, was recognized as the turning point of the Operation "Pointblank" and prepared the way for the invasion of Europe.

File "Awards, Commendations and Decorations" Archives 168.7006-5.

Any disappointment he felt, if indeed he felt any at all, was assuaged by his change of assignment and duties. As noted earlier, Anderson had been serving as Deputy Commanding General for Operations under General Doolittle since February 1944 by virtue of verbal command (VOCO). He had done well as Chairman of COPC, a job in which he was to continue until April 1945 when the committee was dissolved, but it was in this new job at Eighth Air Force that he was to gain his greatest reputation since the famous balloon ascension.

CHAPTER VI

WORLD WAR II--DOGMA PROVED AND DISPROVED

The Eighth Air Force, into the operations of which Anderson now stepped with authority to organize and arrange for the combat deployment of the greatest assemblage of aircraft ever known to man, had grown by leaps and bounds since it was first established in the United States in January 1942. Major General Carl A. Spaatz took command of the mostly-paper Eighth in May and the first elements began to move to England that same month. Already recognized as the unit that was to carry out the elaborate strategic bombing dogma of the prewar years, the Air Force concerned itself initially with base allocations, plane buildup, personnel, and cementing relations with the British to whom the "Yanks" were already something of a mixed blessing.

The British, with a comparatively long history of strategic bombardment themselves, had been forced by political decision in the late 1930s to drop heavy bombardment development and concentrate on the fighter for home defense. This decision flaunted an old RAF

tradition, but it was based upon the prevalent feeling of aversion to war that permeated England and France after World War I, upon the lack of funds to develop both types of aircraft, and upon the British cabinet's preference for defense from German bombers as opposed to an offensive by air once a war began. Technology followed decision (and led it to a great extent) in England just as it did in the United States. In Britain an effort had been made in the Thirties to compete with the American and Italian planes in the Schneider Cup seaplane races. The engines and airframes developed for those races (the British retired the cup in 1931) led directly to the design and construction of the famous Spitfire and Hurricane fighters. The invention of radar and the necessary communications to link it with the fighters set the stage for the defeat of the Luftwaffe in the famous Battle of Britain in 1940.[1]

England was, however, without a strategic striking force of any size at all. When they did bomb, and at first it was done in daylight in great similarity to the American dogma, they suffered prohibitive casualties. To prevent this, and until aerial superiority could be won, the British turned to night bombing. The state of the art made night bombing tantamount to area bombing, a situation the

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[1] Derek Wood and Derek Dempster, The Narrow Margin (New York: McGraw-Hill, 1961), pp. 81-100. Also Sir Charles Webster and Noble Frankland, The Strategic Air Offensive Against Germany, 1939-1945, 4 vols. (London: HMSO, 1961), I "Preparation," pp. 76-91.

Americans initially found morally repulsive. To the British mind, the American dogma of daylight, high altitude, precision strategic bombardment had been disproved--at least until more favorable circumstances existed. With full knowledge of this fact, the infant Eighth Air Force insisted on pursuing its original concepts and the first raid on 17 August 1942 seemed to bear out the fact that the B-17 could go in and come out alone, defending itself en route. Initially, the AAF had proven its beliefs.[2]

It was not until the Casablanca Conference in January 1943 that the idea of the strategic bombing of Germany was made a firm part of Allied strategy. With the inception of Operation POINTBLANK, as the Combined Bomber Offensive was called, the Americans and British had their opportunity to prove that air power could make the contribution to war that their air leaders had so long felt that it could. Prior to the 1943 conference the American airmen's confidence in their dogma had stemmed from a deep faith in prewar, relatively untested concepts added to which were barely five months of rather inconsequential practical experience. In those five months between August 1942 and January 1943 the AAF had attempted to prove itself. General Eaker, the Eighth's commander, acknowledged the problem when he wrote, "A subsidiary purpose of our early bombing operation will be to determine our capacity to destroy point targets by daylight

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[2] Craven and Cate, I, pp. 662-64.

accuracy bombing and our ability to beat off fighter opposition and to evade antiaircraft opposition." It went without saying at the time, all of this was to be unescorted.[3]

Losses were incurred during the gradually increasing bombing activity in 1942, but they were minimized by the fact that the RAF had agreed to escort the B-17s and the newly-arrived B-24s with Spitfires to the limit of the fighter's range. While not part of the original plan, the American bomber crews quickly learned the value of fighter escort and grew to depend upon the Spitfires until the presence of American fighters enabled the RAF to return to aerial defense duties.

In spite of the considerable planning for the strategic bombardment operations on both sides of the Atlantic since the war began, the actual war in the air was an improvisation from the very beginning. Anderson discovered this very soon after his arrival in England, and in a later interview stated that "I'm over there to plan for an improvised war."[4] If this sounds shocking, it must be remembered that the AAF had no previous bombing experience in combat, and no background for the type of effort upon which they had embarked. With nothing to go on but theory and common sense it is not surprising that the war was

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[3] VIII Bomber Command Diary, 1 August 1942, Reel #50, Archives 9446-4.

[4] Interview with General Anderson by Lieutenant Colonel T. A. Julian, USAF, Maxwell AFB, Alabama, 21 November 1963, copy in author's possession.

"improvised" as they went along. New bomber formations were evolved when losses seemed prohibitive with the old one and new tactics were being tried constantly in a search for the best formation for both bombing and defense from German fighters. Each new aerial grouping of planes could lay claim to prior success in actual combat. It was a difficult way to learn, this trial-and-error, and very costly to the "students," yet it was the only way for the inexperienced air leaders to put into actual practice the preconceived theories to which the AAF leaders were so dedicated.[5]

Tactics were only part of the problem, however. The demands of the Pacific war prevented every plane that American industry produced from finding its way to England as Spaatz and Eaker would have liked. Then too, Operation TORCH, the invasion of Africa, diverted most of the fighter aircraft and many of the medium bombers from England. The typically bad weather of Europe gave no aid to green crews accustomed to the generally fine weather found at training bases in the United States. At these home bases training had been accelerated at such a rate that many crews of the bombers required more than just theater familiarization when they arrived in England. Maintenance was a significant factor, especially in 1942 when only 59.9 per cent of the bombers in England were flyable at any one time. In addition the B-17s had "bugs" in them that only flying experience could uncover.

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[5] Tac. Devel., pp. 2-48.

This working-out of simple mechanical malfunctions on the B-17s became so bad in December of 1942 that General Eaker wrote to General Arnold, "I am faced by the serious possibility that I may have to ground all heavy bombers until the technical order change has been made."[6] Overall the bombing accuracy experienced thus far was above English standards, but it still left much to be desired and, with the problems already noted, it is no wonder that the Eighth was unable to mount any sizable aerial offensive in 1942.

It remained for the Casablanca Conference directive which established Operation POINTBLANK to create some semblance of order out of the experimenting that had thus far been done. In addition to setting in motion the Combined Bomber Offensive, the Conference approved the organization of the COPC of which Anderson eventually became the Chairman. It was an auspicious start for the new year--a year that would prove at best, indecisive, and very nearly disastrous. It was the year of testing and trial for the Eighth Air Force and their doctrines. Anderson arrived in the middle of that testing, fresh from his stateside Plans duty and could observe the entire Allied air effort from his position on COPC. In this assignment he was able to see the results of the personnel planning he had done earlier in Washington.

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[6] Letter, Eaker to Arnold, 11 December 1942, Reel #50, Archives. See also Kenneth P. Werrell, "The Tactical Development of the Eighth Air Force in World War II" (unpublished Ph.D. dissertation, Department of History, Duke University, 1969). Chapter II is most helpful on this subject. Hereafter cited as Werrell.

It was gratifying to watch the pipelines begin to bulge with freshly-trained crews ferrying new planes from the United States to England over routes he had recommended as the buildup of American air power got under way in earnest and the genius of American production broke all records. There were not enough planes as yet, all the leaders agreed on this point, and the losses experienced were blamed as much on too few planes in the formations to protect each other as on German fighters and flak. It was clear that the American dogma of undefended bombers being able to carry out the strategic defeat of a nation was still prevalent when the Casablanca Directive contained the following statement:

> Given a force of 300 heavy bombers flown by trained crews, General Eaker believed he could attack any target in Germany by day with less than 4 percent loss. Smaller numbers would naturally suffer more severely. Despite all problems and currently effective limitations, he stoutly maintained that "daylight bombing of Germany with planes of the B-17 and B-24 types is feasible, practicable, and economical."[7]

The Eighth Air Force had as close to a "carte blanche" as any military force could ever receive to put into operation the mandates of Casablanca. Bombing missions utilizing a hundred planes at a time were common in the first six months of 1943 hitting targets in the occupied countries and in western Germany. By 29 May 1943 the largest mission yet flown was launched when 279 airplanes participated of which 238

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[7] As quoted in Craven and Cate, II, p. 236; also quoted in Anthony Verrier, The Bomber Offensive (New York: Macmillan, 1969), p. 159.

finally reached and bombed the targets.[8]

To the list of strategic targets in Germany drawn up initially by Anderson and the other AAF planners for AWPD-1 and modified later by AWPD-42 and the conferees at Casablanca, the Combined Bomber Offensive plan now added ball bearing plants. The selection of such a target was deliberate and represented a departure from the general concept of naming an industry such as aircraft or oil, or a strategic function such as submarine pens or transportation. Target planners at Allied headquarters, at COPC and in London and Washington were in general agreement that the ball bearing industry of Germany was vital to all mechanized equipment, military and civilian, and that the industry was concentrated in relatively few places. Prominent among those places was Schweinfurt which in May of 1943 produced 48 per cent of all the ball bearings made by the Axis powers. It had been a key target from the beginning, but with the addition of ball bearings to the list it became all the more important. It fitted the American "bottleneck" theory of bombing perfectly--hit one industry to shut down many. The only question was the distance from the English bases to the target and the lack of fighter escort for such a mission.[9] By adding tip and belly tanks, some made from pressed paper, to the P-47s the escort range was greatly increased. Now instead of leaving the bombers

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[8] Eighth Air Force Mission Folder, 29 May 1943, Archives 519.33.

[9] Tac. Devel., p. 81; Werrell, Chapter IV.

over the coast of France they could escort them to a point east of the interior Dutch border and meet them there on the return trip. Bomber missions during the last of July 1943 and the first of August hit targets in central and northern Germany and found the fighter resistance considerably increased. The unescorted bombers, even in groups of over 100, began suffering much higher losses than anticipated. In the period from 24 July to 30 July, the Eighth lost 88 bombers for a loss rate of 8.5 per cent; not considered excessive in view of the mission accomplished, but embarrassing to the AAF committed as it was to the aerial destruction of the Reich. On 12 August the Eighth flew a four-pronged raid against the Ruhr with 243 bombers. It lost 25; losses which if prolonged would soon bring the bombing raids to a halt through lack of planes.[10]

To celebrate the first anniversary of AAF operations in England, the 17th of August, the Eighth tackled the Schweinfurt bearings plants, and for good measure, the Messerschmitt aircraft assembly plants at Regensburg. Anderson's COPC task group had formulated the plan on 2 August but bad weather forced postponement. It was the deepest penetration of German territory to that date and the 376 B-17s dispatched represented the largest force to participate in a mission to that date. It was also the bloodiest mission; the bombers over Schweinfurt losing 24 and those over Regensburg losing 36. This total

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[10] Craven and Cate, II, p. 682.

represented 19 per cent of the finally-attacking 315 bombers. The German fighter defense was fierce, persevering and deadly; precipitating the greatest aerial battle in history to that date. Bombing results were acceptable but not in keeping with the high cost. The damage forced the Germans to fall back upon Swedish sources, upon simpler type bearings and upon the dispersal of their industry. It was November 1943 before German production was up to its pre-August levels. At no time, however, was Germany without sufficient ball bearings which indicated just how difficult it was to correctly estimate the potential effect of a destroyed industry upon the overall economy of a nation. The Regensburg air groups dropped their bombs and instead of returning to England, flew on to bases in North Africa. Of this first attempt at shuttle bombing, Colonel Curtis E. LeMay, commander of the 3d Air Division, involved in this portion of the raid, expressed such disappointment at the difficulty of operating heavy bombers out of a secondary base with only partial equipment, that further attempts were shelved for the time being.[11]

The Eighth returned to Schweinfurt in another bloody, record-setting mission on 14 October 1943. A force of 291 bombers made the deep, unescorted penetration and were met with all the fury the Luftwaffe could muster. Rockets, cannon and even parachute bombs were used by the German fighters in a skillful blend of tactics that rocked

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[11] Craven and Cate, II, p. 682-84, 686-87; Werrell, Chapter IV.

the AAF formations but did not stop them. One combat wing was almost completely wiped out while another lost 29 of 49 airplanes. The bombing accuracy of those planes that reached the target was very effective and forced upon the Germans the realization of the immediate necessity for plant dispersal. Initial reports of the destruction accomplished on this second raid were sufficiently encouraging to have General Arnold tell reporters, "Now we have got Schweinfurt."[12] Postwar analysis revealed this to be untrue for, as previously stated, the Third Reich never suffered for the lack of ball bearings. Schweinfurt was put out of action for some time, but production continued elsewhere in Germany and was abetted by imports from Sweden. Initially, the raid was considered a success, but the huge losses were an indication of a deeper and more meaningful problem facing the Allies which, when boiled down, was simply the success or failure of the Combined Bomber Offensive's daylight operations.

In sum the Eighth lost 65 bombers out of its force on that October "Black Thursday." There were 642 crewmen that failed to return from the mission. It was a loss rate far in excess of anything

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[12] As quoted in Craven and Cate, II, p. 704. Arnold's optimism was based upon a message he received from Eaker on 15 October 1943, "I class it pretty much as the final struggles of a monster in his death throes. There is not the slightest question but that we now have our teeth in the Hun Air Force's neck." Message, Eaker to Arnold, 15 October 1943, Reel #51, Archives 9446-5. See also Verrier, pp. 234-37, who tends to excuse Arnold's premature optimism as balm to sooth the public outcry over the heavy losses.

experienced before or that would come after. The Eighth had sent the cream of its crop against the Luftwaffe and it had been rebuffed with losses that were not acceptable in sustained operations. In short, the Eighth had, for the time being at least, lost aerial superiority over Germany--the objective of Operation POINTBLANK. There were many who were prepared to say that the British were right and the American dogma of daylight high-altitude precision bombardment was false. In that fall of 1943 the American Air Forces reached their lowest ebb at a time when American production and training facilities were beginning to take up the slack. Mercifully, for the bomber crews and their leaders, a long period of bad weather settled over Europe. The plane crews rested, planes were repaired or replaced, tactics were reexamined and targets reevaluated. As the bad weather continued into 1944 morale gradually rose and the public clamor against the losses subsided. General Arnold told his commanders in late December 1943, "It is a conceded fact that OVERLORD and ANVIL will not be possible unless the German Air Force is destroyed. Therefore, my personal message to you--this is a MUST--is to 'Destroy the Enemy Air Force wherever you find them, in the air, on the ground, and in the factories.'"[13] It was a message of desperation. As he wrote

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[13] Message, Arnold to Commanders, 8th and 15th Air Forces, 27 December 1943, as quoted in Robert F. Futrell, "Air Power in World War II," Chapter III in Monro MacCloskey, The United States Air Force (New York: Praeger, 1967), p. 49. OVERLORD was the code name for the Normandy invasion, ANVIL the name for the follow-up invasion of southern France.

later, "Could we keep it up? To this day, I don't know for certain if we could have. No one does."[14]

Arnold was to get his answer but in a way he had not foreseen at the beginning of the war. By the time the weather broke over Europe sufficiently to allow more large-scale raids it was late January 1944. The new Fifteenth Air Force under General Eaker had begun raids out of Italy into the south German industrial area and a new plane had arrived in England--the P-51. At last the Allied bombers had a plane that could escort them deep into German territory, fight off the Luftwaffe while the bombers destroyed the target, and still have enough fuel to escort the bombers home. With the necessity-invented drop tank, the P-51 was even better in range. Even tied to the bombers purely for escort, as it was initially used, the P-51 proved to be the plane that the AAF had longed for. "That we did not have it sooner, was the Air Forces' own fault," said General Arnold. More than any other one plane, the P-51 furnished General Eisenhower with his Allied skies on D-Day. In the crucial battles of "Big Week" in February 1944, the P-51 received its real baptism of fire.[15]

General Anderson officially assumed his new position as Deputy Commanding General for Operations with Eighth Air Force in

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[14] Arnold, p. 495.

[15] Ibid., pp. 376 ff. Also Verrier, p. 323. For a description of "Big Week" and Anderson's participation, see previous chapter. On the long-range fighter see Werrell, Chapters III and V.

June 1944 in the midst of the searching examination that was under way to find a way to carry out the bombardment of Germany in the daylight without prohibitive losses. The excellent work he had accomplished on the COPC committee had established for him a well-deserved and very high reputation as a commander who reasoned through a problem to an acceptable, pragmatic solution. When Lieutenant General James H. Doolittle offered him the post as one of his three top deputies in Eighth Air Force, Anderson felt his experience permitted him to insist upon certain changes.[16] He had never been assigned directly to bombers before, but he felt his observations and experience in tactical planning made him qualified to institute some fundamental changes. As he told it later in an interview, he strongly urged upon Doolittle two provisions; one, that the war being fought be considered an aerial war. By that he meant that we attack the Luftwaffe in a war of attrition and destruction to regain control of the skies. To do this, he requested his second provision to accompany and complement the first--that the escort fighters, and particularly the new P-51, be relieved from close escort of the bombers and allowed to roam ahead, above and to the sides of the bomber formations to seek out the German fighters and destroy them before they had a chance to attack the bombers. This was a risky thing to advocate

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[16] Doolittle and Eaker exchanged commands in January 1944. Special Order 163, 17 June 1944 sent Anderson from duty as Assistant Chief of Staff A-3, 8th AF to Deputy Commanding General for Operations. File, "General Anderson's Pay Vouchers," Archives 168.7006-15 and "Special Orders," Archives 168.7006-31.

in the days following the late 1943 losses to the AAF, but he stuck to his request and succeeded in gaining Doolittle's permission. Anderson felt the fighters would be hit, and hit hard, for a while, but in releasing them from close escort he would "restore their flexibility, restore their initiative, and he charged them with one primary goal: when you meet enemy opposition in the air, that's your target and if it pulls you away from the bombers, stay on it until it can't come back up again."[17]

This change seemed tactically more dangerous to the senior commanders, steeped in the traditions of Douhet and Mitchell, who were still recovering from the necessity of a fighter escort at all. Anderson had long believed in the efficacy of fighter support of the bombers for a very practical reason--weight. The B-17s carried thirteen machine guns (.50 caliber) and the B-24s carried ten. The weight of the ammunition for these guns had to be balanced against gasoline for extended range. As the bomber offensive extended itself deeper and deeper into Germany more gasoline was gained by sacrificing the amount of ammunition for each machine gun. The point of no return was reached when each machine gun had only fifty seconds of ammunition aboard. After that the bomber was a sitting duck, and, without fighter escort, completely defenseless. Anderson recognized this problem and had fought

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[17] Kenneth Leish, "Flight Interviews--Anderson," p. 25. This is a transcript of an interview dated December 1960 and was made at Maxwell AFB. Archives K146.34-3. American fighters in England were commanded, at the time, by Major General William E. Kepner of Explorer I fame.

for more escort fighters before he arrived in Europe. Now he was deliberately taking the fighters away from the bombers, with the possibility of a return to the awful losses experienced in 1943, to allow them to assume the offensive role for which they were originally designed.[18]

As previously mentioned, the sustained aerial raids in February 1944 during "Big Week" proved to be a major turning point in Operation POINTBLANK. It would be impossible to prove that Anderson was a major architect of this aerial onslaught even if such were true. He did, however, have a great, but largely unidentifiable, impact on each of the raids, their planning and their accomplishments. It was these raids that broke the back of industrial Germany by disrupting production of aircraft, oil, and rubber, and wrecking the transportation system. It was the kind of war Anderson had termed "improvised." The formidable Luftwaffe had dictated that the air war could not be fought according to preconceived concepts; rather the existing situation had to be met with flexible strategy and tactics adjusted to the moment. As the war of

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[18] Usually B-17 gunners had 1000 rounds of .50 caliber ammunition per gun. The Browning machine gun could fire 600 rpm. Normal missions of 1943-44 lasted about six hours. It required exceptional restraint on the part of the gunner under attack to have enough ammunition left to protect the bomber on the return trip to the base. Leish, "Interview," p. 26; Interview, Julian, 1963.

Doolittle released the fighters on 24 January 1944. Anderson's assumption of authority came VOCO on 7 February. Anderson claimed the authorship of the idea repeatedly in later speeches. He also stated that the three Bomb Division commanders, all senior to him, tried to have him relieved for his advocacy but Doolittle backed him. Air War College Lecture, "Development of U.S. Strategic Air Doctrine, ETO, WWII," delivered 20 September 1951. Archives K239.7162-6.

attrition began to pay dividends in the spring of 1944 one aspect of the prewar dogma was revealed in a new light. The invincible bomber could contribute, and did, a tremendous amount to the ultimate victory, but it could not do it alone as Douhet and even Mitchell had envisioned. Aerial superiority had to be gained first, and on this point there had been few prophets in the early years of air power.

As thousand plane raids began to rock the city of Berlin with fewer and fewer losses to the Allies, Anderson could afford to relax on occasion. He accepted invitations to speak at the Royal Air Force Staff College (a place to which he was to return several times after the war) in October 1944 and again in January 1945. He received distinguished visitors such as Spyros P. Skouras, the president of 20th Century-Fox studios, and conducted a quick fact-finding trip to the Mediterranean theater to coordinate shuttle bombing and to report on conditions there to General Doolittle. Each of these activities was inconsequential, with the exception of the last mentioned, but they indicate a lessening of the terrific tension that had been present during the dark days of late 1943 and early 1944. By now new tactics were being practiced and the heavy losses of the Luftwaffe had forced it to retreat deep into Germany on the defensive. At last, the long-awaited D-Day could be scheduled without worry about the skies over the beachhead.[19]

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[19] File, "Correspondence Pertaining to Speaking Engagements October 44-August 1947," Archives 168.7006-7; Skouras to Anderson, 11 March 1944, "Personal Correspondence File," Archives 168.7006-1;

The year 1944 ended with General Anderson's fame increasing. As the tide of battle swung in favor of the Allies, news reports began to mention Anderson's work in planning missions and supervising their execution. Lowell Thomas devoted the majority of his broadcast of 7 September 1944 to his friend of ballooning days now past.[20] On the 7th of December, Special Orders were issued in the Office of the Secretary of War announcing the temporary promotion of several officers to higher rank. The list contained the name of Orvil A. Anderson who was thereby promoted to the temporary rank of Major General with a date of rank of 9 November 1944. "Nobody knows better than I do how richly deserved and how long overdue is this promotion," wrote General Doolittle in a letter of congratulation.[21]

The war was not over by any means as the bitter fighting at the Battle of the Bulge was to attest. German production was just beginning to peak as the Allies discovered later, but the "improvised" war had been won. The skies over Europe, while a long way from being exclusively Allied, were now dominated by them, and the Third Reich, still able to inflict costly losses, was reaching the bottom of its strategic

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"General Anderson's Pay Vouchers," TDY orders of 29 March 1944 for period 31 March to 13 April, Archives 168.7006-15.

[20] Letter, Dr. T. J. McKnew to Anderson, 8 September 1944, file "Personal Correspondence File," Archives 168.7006-1.

[21] Letter, Doolittle to Anderson, 22 November 1944, Ibid.

reserve. Anderson could don his second star with a great deal of satisfaction.

An analysis of the Luftwaffe as 1945 dawned led to optimism, but of the most cautious type. Bombing accuracy, never too good, had improved during 1944 to a high of 39 per cent of bombs dropped within 1000 yards of the target. This was achieved in the maximum effort of "Big Week" and with few exceptions not equalled again. Radar bombing which had been widely adopted had the effect of area bombing due to its lack of accuracy and led many to comment unfavorably upon the "pickle barrel" concept to which the Americans clung with a stubborn fanaticism. In most cases it took several raids to knock out a target to any appreciable extent, and that did not mean that the target necessarily ceased production altogether. The overall accuracy of the Eighth Air Force in placing its bombs within 1000 feet of the target was a surprisingly poor 13.7 per cent.[22]

In mid-1944 the Germans introduced the jet-powered Me-262 fighter. It was fast and efficient and took its toll of bombers despite its bungled use by a desperate Hitler. German fighter armament was increased to include 20mm cannon which was sufficient in range to allow their fighters to stay outside the range of American bomber .50 caliber machine gun fire and still inflict damage. By mid-1944 Allied bombers

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[22] United States Strategic Bombing Survey, "Air Force Rate of Operation" (n.p. 1945), exhibit 29.

were receiving more cannon hits than machine gun hits by a ratio of 1.35:1.[23] It was the German 88mm antiaircraft gun that began to take the greatest toll of Allied bombers. An all-purpose gun, the 88mm weapon was manned chiefly by young boys, POWs and limited-service personnel. Nonetheless, the accuracy was sufficient to earn areas of known flak concentrations a healthy respect from bomber crews.

After D-Day the Allies felt they had general, if not complete, control of the skies. Bomber losses were cut in half from those of January 1943, but the large increases in the numbers of planes made serious losses appear less than they were, percentage-wise. With the decline of the Luftwaffe in June 1944, the priority target for strategic bombing became oil with transportation next.[24] Losses became heavy once the strategic bombing campaign, suspended temporarily during the invasion, was resumed. In September 1944 the Luftwaffe rose to challenge the AAF during raids on the Ruhr and throughout the month intense air battles raged over central Germany. The September raids almost completely stopped the German synthetic oil production and brought their reserves to a catastrophic low. This more than any other one thing was to account for the sharply reduced aerial resistance during the remainder of 1944. The Germans could still react, and they did on occasion. On 26 November during a 1000 plane raid on various marshaling yards they

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[23] Tac. Devel., p. 99.

[24] Ibid., pp. 87-88; Craven and Cate, III, p. 279.

shot down 34 bombers and the next day destroyed 11. However, the cost to the Luftwaffe was 230 fighters, a number they could no longer hope to replace let alone man and fuel. It was a war of attrition such as General U. S. Grant inflicted upon General R. E. Lee in 1865 just prior to the collapse of the South. The latter could still inflict losses, but for every loss he suffered the cause suffered more for the replacements were gone. Such was the cause of the Luftwaffe as 1944 ended. Allied commanders saw it as the year of victory over Europe, not final by any means, but with a definitiveness that Germany could no longer overcome despite Albert Speer's Herculean efforts on the production front. Once the Battle of the Bulge was in hand, there was certainty of an early collapse of Germany, and in early 1945, the AAF knew it could take considerable, but by no means sole, credit for such optimism.[25]

January 1945 was a month given over mostly to the bombing of ground targets in support of the land offensive. Some oil targets were hit, enough to keep production from resuming, but radar bombing in bad weather was not accurate and hence not of great value. A heavy attack on Berlin was planned in the hope of destroying further the German morale which had remained surprisingly resilient. Weather prevented the attack until 3 February 1945 at which time almost 1000

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[25] The preceding summary is based upon Werrell, Chapters VII and VIII; Craven and Cate, III, pp. 278-84.

bombers hit Berlin and 400 B-24s hit Magdeburg. Accuracy was good due to clear weather over the target and Berlin was left a ruined city losing many of its official functions to other cities as government offices were moved. Civilian casualties on that raid were placed at nearly 25,000. There was criticism, but the mission had been carefully planned to avoid indiscriminate bombing of civilians and later reconnaissance showed the bomb patterns had followed the plans closely. The remainder of the early part of February was devoted to wide-ranging attacks upon oil refineries, storage areas and transportation of various kinds. By mid-February the Allied land armies were ready to resume the push which von Rundstedt had so successfully interrupted in December.

General Eisenhower's headquarters asked the Allied air forces to mount Operation CLARION, a long-planned aerial blow at German communications designed as much to affect the economic life of the nation as the tactical situation. It was a plan calculated to impress upon the German people, with vivid reality, the capability of the Allied air forces to smash Germany. In September 1944, General Arnold had proposed that every British and American airplane be used on some clear day to simply blanket the Reich, attacking military objectives in small towns hitherto untouched by the bombing. Without entailing the risks of morale bombing, Arnold felt the Germans could see first hand the awesome might of air power and their helplessness against it. As

the idea was planned in greater detail by Anderson's COPC it was given the name CLARION and filed awaiting only the date and proper time. By late February 1945 Eisenhower's request indicated that the time had arrived.[26]

The weather report for 22 February revealed a winter rarity about to occur: clear weather over almost all of Germany. In the secret, underground operations room at Eighth Air Force, the order was given for the execution of Operation CLARION. This action set into motion an interesting series of events which began at 1600 hours on the afternoon of the 21st.[27] Some thirty staff officers assembled in the underground command post, flanked by wall maps of Europe showing the latest intelligence estimates of German fighter strength and flak concentrations. News that CLARION was to take place the following day had already been passed and briefing officers busily gathered information for the decisions to come. At eight minutes after the hour Anderson strode into the room and took his seat facing the maps. Major Peter Truett, age 26, a native of Stevens, Arkansas, rose to brief on the weather. Just as predicted the skies over most of continental

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[26] Craven and Cate, III, pp. 639, 732-33.

[27] The following reconstruction of the planning for Operation CLARION is based upon a news dispatch filed by United Press war correspondent Leo S. Disher, who was present during the events described. The Columbia Broadcasting System relayed his account in the United States on 7 March 1945. A transcript was obtained by a friend and mailed to Mrs. Anderson. File, "Congratulatory Letters and Messages," Archives 168.7006-21.

Europe would be clear, but true to form, there could be fog and low clouds from five to six thousand feet over England. There was a pause after which the General thanked Truett and asked for target information. The raid was to include every heavy and light bomber available, close to 2200, and close to 15,000 crewmen. No target of any military significance had avoided consideration. Grade crossings, bridges, stations, barges, docks, railroad signals (which experience in France had revealed to be complex and hence vulnerable), tracks and marshaling yards were all fair game in an all-out effort to terrorize the German citizenry into surrender.

General Anderson asked for details on some targets, on the locations of flak pools, alternative routes and, once again, the weather. After all the briefers had finished and all the staff members had asked their questions and received their answers, there was silence. Anderson sat, his head in his hand, staring at the maps in front of him, one of which depicted the progress of a raid currently under way. Seven full minutes of silence followed. Finally Anderson said, "Let's get enough targets north and southwest of Berlin to absorb one full division." He wanted the routes in and out to miss the flak concentrations, with all planes using the same routes until they broke away to hit the individually assigned targets. The primary targets would be rail yards and marshaling areas with secondary objectives being rail bridges, viaducts, and roadbeds. The raid would go in at between 7000 and 12,000 feet, a

low altitude for the B-17s and B-24s. Having made these decisions, Anderson turned the details over to his staff officers and left the room to return to his office. The meeting had lasted 36 minutes.

The planners hoped that CLARION would disrupt the splendidly organized, but sorely tried, Reichsbahn, which up to this time had continued to operate at near capacity despite bombing raids. The morale of the railroad repair crews was known to be low and a massive attack, such as the one called for in CLARION, just might cause wholesale desertions. The incessant bombing of oil refining and storage targets in 1944 had created a serious gasoline shortage. The destruction of the railroad system would further strain the truck transport in its movement of the precious stocks of gasoline.

Later in the afternoon General Anderson returned to the underground war room for a final session which lasted close to 50 minutes. Details were discussed, final decisions made and orders issued. It was planned to be a bold attack, and involved far more targets than the usual strategic raid of the past. There were many in both the British and American air forces that opposed the use of heavy bombers on such targets, but the order had been issued to fly CLARION as planned and this was about to take place. "We'll know a great deal more about the Luftwaffe at 1600 tomorrow afternoon," one staff officer remarked as the second meeting finished. "Nobody ever did anything more insulting to the Luftwaffe than this."

The weather on Washington's Birthday was just as predicted. The planes attacked from the planned altitudes after splitting up into squadron-sized groups to hit targets that ranged from the German-Swiss border to the Baltic. The 1st and 2d Air Divisions shared 25 targets and the 15th Air Force out of Italy hit another 30. Over 2111 heavy bombers from the Eighth and Fifteenth Air Forces participated, plus the light bombers and the fighters that swarmed all over the skies to protect the bombers. It was an awesome display of aerial power, but rapidly worsening weather prevented the Germans from seeing all the planes that flew over them. Some of the primary targets were missed because of the poor visibility. Anderson's 1411 bombers lost only 7 and flak was the chief culprit. The German fighters were in evidence but for the most part failed to challenge the bombers.

As the debriefing reports were assembled it appeared that the raid had been a huge success and that the Reichsbahn had been put out of commission. In the first flush of victory a similar raid was scheduled for the following day. As the pilots saw the second raid, it was like rubbing salt into the wound. The weather again proved partially cooperative although the 2d Air Division bombed by radar. Twenty-six targets were hit with a loss of two bombers and no crews. Even the Luftwaffe's famed jet, the Me-262, was seen but tried to refuse direct combat. American P-51s destroyed seven of them. It was icing for the cake, an astounding indorsement of American superiority in the skies over

Germany. The entire Nazi industrial complex lay open to attack from the air. Actual plane losses sustained by the Allies were greater than the German losses, but when considered alongside the huge number of aircraft participating in the two raids, the losses were minimal. By 1945 the Allies could sustain greater losses than the enemy without appreciable effect due to the production accomplishments of the United States.

Careful study of the reconnaissance photographs several days after the raids showed that the Reichsbahn had not been put out of operation, and intelligence sources reported no wholesale desertions. Rapid German repairs prevented a general breakdown in rail traffic and priority cargos continued to reach the front lines. The German people had beheld the might of American and some British air power and managed to stand up under the pounding quite well. The effects were mainly local and temporary. The primary contribution of the raids was in exposing the near collapse of the Luftwaffe and American planners had counted upon this. "We could lose three hundred planes today," General Anderson stated, "but we won't. By the time that Gauleiter gets through thumbing the pages of his manual, the boys will be coming home."[28] Secondarily, they proved that once aerial superiority had been won, the initial bombing theories were correct, and a proud nation could be

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[28] The War Reports of General of the Army George C. Marshall, General of the Army H. H. Arnold, Fleet Admiral Ernest J. King (Philadelphia: J. B. Lippencott, 1947), p. 429.

reduced to rubble and eventual defeat through the use of air power.[29]

As the Eighth Air Force returned to its strategic attacks in March 1945, there was an air of certainty prevailing in the command headquarters up and down the line. The cautious optimism of the first of the year had given way to a lively debate as to the time the Germans would lay down their arms. On this note General Anderson took his first leave since arriving in Europe in June 1943. He flew the scheduled ferry plane back to the United States and reported to General Arnold on what had transpired since they had last seen each other. By now Anderson was a well-known public figure as a leader of the Army Air Forces that had been so much in the news recently. The slightly exaggerated press reports of Operation CLARION had scarcely left the front pages of the papers when the thousand plane raids on Berlin resumed. Upon his arrival in the United States in March, the AAF public relations personnel scheduled Anderson for an appearance on the March of Time broadcast of 15 March 1945. It was a brief monologue in which he stated that the air war was now in its final phase, the "complete and final destruction of the German war machine." He listed the three top priority targets for the Eighth Air Force as oil, communications, and

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[29] In addition to the Disher dispatch the following sources were used in the reconstruction of the planning for Operation CLARION: AAF Historical Study No. 70, "Tactical Operations of the Eighth Air Force 6 June 1944-8 May 1945," Archives 101-70; 8th AF Tactical Mission Report (Mission No. 841), 22 February 1945, Archives 520.331; Craven and Cate, III, pp. 733-35; Tac. Devel., p. 144.

"appropriate war industries." He mentioned that Germany's strategic reserves, especially of oil, were "critically short." A high priority has been placed on "supply and transport concentrations intended for early use by German front-line troops." He went on to say:

> It matters little to us if the target is on the East front or the West. It's all one war to us and if we help the Russians by knocking out German communications on their front, we are helping end the war that much quicker.[30]

Once the broadcast and the round of official calling and reporting was over Anderson headed for San Diego and a reunion with his wife. So effective had been his March of Time broadcast that the AAF took him off leave and put him on temporary duty to make speeches in Salt Lake City, Utah, (where he visited briefly with his family), San Francisco and Los Angeles, California, and Fort Worth, Texas. He was pressed into service to speak at War Bond rallies, war production plants and fund-raising dinners. In San Francisco on the 21st and 22nd of March he held his first press conference. During the questioning he stated, "Air power can eliminate a highly industrialized nation as a military force. A nation of concentrated industrial targets can be completely destroyed by fire and the most effective means of delivering that fire is the airplane." This was true, however, only with an industrial state. Anderson went on to say, "An air force can never defeat a force of aborigines. It should not be charged with mopping up or

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[30] March of Time broadcast, 15 March 1945, a text of which is in Archives 168.7006-1.

occupation if a nation will not surrender."

On the subject of support of ground troops, Anderson stated that the American army broke through at St. Lo after the invasion because of a carpet of 5000 tons of bombs dropped from the Eighth's planes, and the German forts at Metz were neutralized for General Patton by aerial bombardment. He went on to say that while troop support is alright, it is not the use for which heavy bombers were intended. He believed and so stated that even if Russia had fallen to Germany, the Reich could have been defeated by aerial bombardment. He made no mention of the increased number of fighters the Eighth's bombers would have had to face had the Russian front collapsed. In the days just prior to V-E day, no one considered questioning Anderson on this technicality. The war in Europe was all but over, and the "if" points were behind. The next day Anderson and his wife left for Los Angeles and another round of speeches.[31]

The press called Anderson the "American general who plotted the airborne destruction of Germany."[32] His fame was such that the couple was given a grand tour of Warner Brothers studio and photographed with such stars as Jack Carson, Janis Paige, Van Johnson, and a bevy of chorus beauties. Later in the day they visited the home

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[31] Clippings from the San Francisco Chronicle, Examiner and Call-Bulletin along with the Oakland Tribune, all dated 22 March 1945 are found in "Correspondence Pertaining to Speaking Engagements, October 1944-August 1947," Archives 168.7006-1.

[32] Ibid.

of Bette Davis and were introduced to Glenn Ford as well. Mrs. Anderson remembers the occasion clearly and found the tour exciting and all too short. The General had only two weeks of leave before returning to his duties in England. He had barely warmed up to the speaking circuit once again when it was time to fly back. The experiences did prove one thing to him, however, and that was that the war had not changed his personal enjoyment of speaking to the public. His old subject, the Explorer flights, was exchanged for a new and vital one--airpower.

Anderson returned to England in time to plan the all-out raids of April 1945. On the 7th, a raid of over 1300 bombers was furiously attacked by over 200 German fighters. The severity of the attack astounded the American pilots, but the German tactics were even more surprising. For the first time, the Germans deliberately attempted to ram American bombers. Ten American planes were downed or damaged in this manner. Serious as this was, it was the last concentrated resistance of the Luftwaffe. From there on out, more German planes were destroyed on the ground than in the air, a graphic demonstration of the lack of pilots and the impoverished oil resources of the Luftwaffe. On raids of the 10th, 16th and 17th of April the combined bombers and fighters destroyed 335, 727, and 293 German planes with only 37 of those being shot down. By the 17th, Doolittle took the fighters

off strafing missions for fear of hitting friendly troops.[33]

The last strategic mission flown by the Eighth Air Force went aloft on 25 April when the 1st and 2d Air Divisions attacked the Skoda armament works at Pilsen, Czechoslovakia. But much earlier than that the strategic war in the air over Germany had ceased for lack of targets. The British were cautioning by 7 April against any further air raids on German cities since the damage would only compound occupation duties. On the previous day Sir Arthur Harris had complained that there were no worthwhile targets for his strategic bomber fleet in Germany. The COPC had reached the end of its usefulness. Known as the "Jockey Committee" during the height of its work in planning the destruction of the German aircraft industry in 1944, they sent the following final dispatch on 3 April, "Jockey has unsaddled and weighed in. Sic transit gloria Tuesday."[34] What air activity remained was conducted in direct support of the advancing ground troops. The European portion of the only strategic air war in history was over. On 16 April General Spaatz, with Eisenhower at Reims, sent out a personal message to General Doolittle in England and Major General Nathan F. Twining, then commander of the 15th Air Force, in Italy:

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[33] Eighth Air Force Mission Folders for 10, 16, 17 April 1945, Archives 520.331; Werrell, Chapter VIII.

[34] As quoted in Craven and Cate, III, p. 754. See also Adolph Galland, The First and the Last (New York: Ballantine, 1957), p. 273.

> The advances of our ground forces have brought to a close the strategic air war waged by the United States Strategic Air Forces and the Royal Air Force Bomber Command.
>
> It has been won with a decisiveness becoming increasingly evident as our armies overrun Germany. From now onward our Strategic Air Forces must operate with our Tactical Air Forces in close cooperation with our armies.
>
> All units of the U.S. Strategic Air Forces are commended for their part in winning the Strategic Air War and are enjoined to continue with undiminished effort and precision the final tactical phase of air action to secure the ultimate objective--complete defeat of Germany.[35]

So ended the strategic air war in Europe. It had not been fought the way Anderson and others had envisioned at the beginning, although Anderson was closer than many in his constant advocation of fighter escort for the bombers. The bomber, good as it was, did not self-defend as had been hoped. Further, the vaunted "pickle barrel" bombing was simply not possible even with the Norden bombsight. Some part of this responsibility lay with the miserable European weather and some more lay with inadequate training. Statistics showed that almost half of the Eighth Air Forces' bomb tonnage was dropped using nonvisual methods. It was small wonder that only about 14 per cent of the bombs dropped fell within the 1000 feet of the aiming point, the established criteria at the time. There were failures on the part of the Luftwaffe in strategy and tactics that contributed immeasurably to the Allied victory. Sir Arthur "Bomber" Harris put it best when he said:

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[35] As quoted in Craven and Cate, III, p. 754.

> The Germans never made a small mistake, because they are cautioned against all small mistakes in their manuals, without reference to which they seldom do anything whatever. But they can always be relied upon to make all the imaginable large and catastrophic mistakes, together with a good many that only a German could think out.[36]

The Allies had mustered splendid equipment which, if not superior to that of Germany, was at least on a par, and with the amazing American industrial production, the war in the air was won partially at least by quantity. This, plus eventually superior tactics and the tardy acknowledgement of the importance of aerial superiority, had chased the Germans from the skies. After that, the prewar bombing doctrines took over and simply smothered German industry.

For his very considerable part in the planning, development and execution of the aerial offensives over Germany, General Anderson, who might never have been in England had he begun his fact-finding trip in the other direction, was awarded an Oak Leaf Cluster to his Distinguished Service Medal. From foreign governments he received the French Croix de Guerre with Palm, the Legion of Honor (Chevalier), the Belgian Croix de Guerre with Palm, and the English Order of the Bath.[37] For services rendered he had every right to be proud. Of lessons learned he would speak at length in the years to come, for he finished his days at war with a keen insight into the problems and

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[36] Sir Arthur Harris, Bomber Offensive (London: Collins, 1947), p. 42.

[37] File, "Awards, Commendations and Decorations," Archives 168.7006-20.

dilemmas of a wartime aerial commander. He was determined that these mistakes would not be repeated.

One thing remained to be done before he could return home or go to the Pacific to finish the fighting there. He desperately wanted a personal look at the damage done by the Eighth's bombing. He had flown over it but he wanted to inspect it first hand. He was to be granted that desire in a way he had not dreamed of before.

CHAPTER VII

THE STRATEGIC BOMBING SURVEY--EUROPE

General Anderson was not the only person who wanted to take a first-hand look at the damage the air war of the past three years had caused. Nor did thoughts of the analysis of such bombing wait for the near-conclusion of the war. As early as March 1944 there existed within the target-selecting hierarchy considerable disagreement as to the priority of oil versus rail transportation. General Spaatz and most of the senior strategic bombardment airmen, Anderson among them, held out for oil. General Eisenhower's staff--namely his Deputy, Air Chief Marshal Tedder; the senior ground commanders; the Commander-in-Chief of the Allied Expeditionary Air Forces, Air Chief Marshal Leigh-Mallory; and most of the RAF--felt that the railway system of northern France and the Low Countries was a target of more immediate consequence than oil. Eisenhower decided in favor of the rail network and many missions were flown by the USAAF and the RAF to complete the disruption of continental rail transportation in preparation for OVERLORD. Not until two days after D-Day did Eisenhower agree to a

switch of priority to oil.[1]

General Spaatz was never reconciled to giving priority to rail targets and whenever possible raids against oil production centers were flown. The dispute itself, however, is of major concern here for it emphasized the need for some sort of impartial analysis of the aerial bombings of Europe once the hostilities had ceased. The initial idea of a bombing evaluation, or "survey" as it came to be called, came from within the USAAF. Originally, it followed the tried-and-true concept of critiquing an operation or maneuver; something that was a standard, required practice in the training years before World War II, and for that matter, in one form or another, well before that. In its final form, the Survey was nothing more than a very expanded critique of American World War II aerial bombing in both the European and Pacific theaters. What made it so important was its elevation to a Presidential Commission, the great care taken with the data gathering (subject to imposed limitations of time, staff, etc.) and finally the willingness of the USAAF

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[1] David MacIsaac (Major USAF), "The United States Strategic Bombing Survey, 1944-1947," unpublished Ph.D. dissertation, Duke University 1969, especially Chapters II and III. This work is the only one that gathers together most of the extant sources, as well as the extensive USSBS files in the National Archives, into a usable entity. As such it performs a very valuable service to USSBS scholars. The only other narrative account of the formation of USSBS is James Beveridge (Major Air Corps), "History of the United States Strategic Bombing Survey (European), 1944-1945," unpublished military history, 2 vol., (Washington D.C., 1946). Vol. I is in narrative form while Vol. II contains originals or copies of the most important letters and orders in chronological order, but otherwise unnumbered. Archives 137.2. Hereafter cited as Beveridge I or II.

to stake its postwar role in the military establishment upon the results. It is necessary then to pause in the narrative and review the background of the Survey prior to recounting Anderson's deep and somewhat bitter involvement in its findings.

Army Air Force planners were painfully aware that the strategic bombing of World War II was without precedent in history. Another equally discomforting awareness was the fact that the target selection system, and the information available for decisions, was inadequate for the urgent needs of combat. Once combat operations did begin, and intelligence began to come in, it was evident that the United States had very few analysts qualified to take the raw data received and turn it into useful information upon which to base future target selection. In short, while the USAAF had the doctrine, it did not have the basis for the implementation of that doctrine. Civilian analysts were brought into the government and did excellent work as the Committee of Operations Analysts (COA), in reporting and establishing a systematic basis for the analysis of target data. They completed their work in March of 1943, at which time they recommended to General Arnold, among other things, that "there should be continuing evaluation of the effectiveness of air attack on enemy industrial and economic objectives in all theaters."[2]

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[2] "Report of Committee of Operations Analysts with Respect to Economic Targets within the Western Axis," dated 8 March 1943, p. 3. Beveridge, II.

The idea for a bombing survey began in England almost at the same time that it had its inception in the United States. Early in the formulative period much thought was given to making such a survey a two-nation effort but this was discarded later on at the insistence of the USAAF leaders who knew of the importance that would be attached to the results in the United States for the future of air power. Also, there was the basic difference of the strategies of the two air forces, the RAF and the USAAF. The former had come, by virtue of bitter experience early in the war, to subscribe to nighttime, area bombing, whereas the Americans clung tenaciously to the dogma of daylight, precision, high-altitude bombing. General Spaatz feared a two-nation effort might degenerate into a justification battle of theories; decidedly not what he, nor anyone else in the United States, wanted.[3]

Major Ralph A. Colbert, Chief of the European branch of the Target Information Section, AC/AS Intelligence in Washington, D.C. was the first person to put into writing the thoughts and discussions of many. From his memorandum addressed to Brigadier General Thomas D. White on 27 March 1944, it was an amazingly short period of time before USSBS came into being. Most important of all the questions Colbert suggested such a study could answer was, "To what extent was the

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[3] Memorandum, Spaatz to Major General Hugh Knerr, 22 April 1944, Beveridge, II. The British conducted a similar survey independently of the American one. There was a free exchange of information between the two nations during their surveys.

original mission of the Combined Bomber Offensive . . . accomplished?" There were others he was asking, as well, such as "What would have been required to achieve complete victory through strategic bombing?" General White sent the memorandum on, with minor changes, to the Joint Chiefs of Staff and to General Arnold. In Arnold's office at the time the memorandum arrived was another proposal for the same type of survey from General Spaatz. The latter letter was inspired by numerous discussions between Spaatz and Major General Muir S. Fairchild. It is the latter's behind-the-scenes guidance of the entire survey project that has earned for him the appellation "father of the Strategic Bombing Survey."[4]

Spaatz did not wait for Arnold's reply but utilized two members of his staff, Colonel C. P. Cabell and Lieutenant Colonel James B. Ames, both of whom had worked closely with General Fairchild before joining Spaatz's staff in Europe.[5] It was Ames' letter that Spaatz had signed and sent to Arnold on 5 April 1944. Arnold's reaction was prompt and favorable. As he said later in his book,

> Another kind of statistics concerned Bob Lovett and me at this time.[6] As soon as it was possible to get it, we needed an accurate, unbiased analysis of the effects of our bombing on the

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[4] MacIsaac, pp. 37, 44.

[5] Lieutenant General C. P. Cabell (USAF Ret.); Ames left a lucrative law practice in Boston to join the service. He has since returned to his private practice.

[6] Assistant Secretary of War for Air, Robert A. Lovett, later Undersecretary of State (1947) and Secretary of Defense (1951-53).

> enemy's economy, on his military operations, and on the termination of hostilities. We both knew that following World War I everybody claimed to have won it. Finally, to stop further arguments, people used to say the Great War had been won by the chaplains. What Lovett and I wanted to do was create an impartial agency which would have at its disposal all the data necessary for a frank report to the President. Was strategic bombing as good as we thought it was? Or were we carried away by our own bombermindedness? Of what real value was tactical bombing?[7]

Arnold conveyed his approval to Spaatz on 21 April 1944, calling it a "splendid idea."[8] Already the two were concerned about the personnel to head up the survey, and both agreed that the Chairman had to be a civilian with an impeccable record, commanding great respect and able to serve without bias. As Spaatz saw the situation the AAF of the future would be dependent upon the results of the survey. He wanted the Air Forces to take the lead in sponsoring the investigation, but ". . . I do not propose in any way to attempt to influence the conclusions of the committee, and I believe they should be strong enough to resist any partisan influence that may be brought to bear upon them. What I want is to get at the facts, and if mistakes have been made in the past, I want to know about them, so that we can be even more effective in the future."[9]

On the 6th of June 1944, as the Joint Chiefs of Staff gathered to monitor the news from Normandy, General Arnold passed around the

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[7] Arnold, p. 490.

[8] Letter, Arnold to Spaatz, 21 April 1944, Beveridge, II.

[9] Letter, Spaatz to Arnold, 20 April 1944, Beveridge, II.

table a short memorandum addressed to Admiral Leahy, General Marshall, and Admiral King. In it he stated that he proposed to set up a survey to obtain a critical evaluation of the "Combined Bomber Offensive in Germany and the occupied countries." He stressed that the survey would have immediate benefits in the war against Japan, and long-range importance in the "possible determination of our whole future air policy." Arnold did not want the participation of the Army or the Navy, simply the concurrence of their Chiefs to avoid any future stumbling blocks or unpleasantness. He got the same with the verbal approval of General Marshall and Admiral King on the spot.[10]

This technicality out of the way, Arnold let the survey project languish in the press of other duties. In Europe, Ames (now a Colonel), backed by the interest of General Spaatz and the assistance of newly-appointed Brigadier General Cabell, went ahead with the actual planning of the survey organization. At first small, around 20 men with a heavy emphasis on the military, the group grew by leaps and bounds as the magnitude of the project began to unfold. On 7 July 1944, Colonel Theodore J. Koenig reported to Colonel Ames in London as did the author of the Washington proposal, Major Ralph A. Colbert. With Koenig as Executive Director, these two, plus others recruited from AAF headquarters in London, began the actual planning of the survey. At this point it was still without a Chairman.

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[10] MacIsaac, p. 63.

The job of obtaining such a person fell to Secretary Lovett, upon whom General Arnold had called when his own initial efforts at obtaining a Chairman had failed. Arnold also asked Lovett to obtain Presidential blessing for the survey. Lovett proceeded to draft a letter to the Secretary of War for President Roosevelt's signature and sent it to the White House. It was dated 9 September, and after receiving the required indorsement it arrived at the War Department on 16 September 1944. Lovett had phrased the letter so that no direct mention was made of the great importance which General Spaatz attached to the survey in determining the place of air power in the postwar world. The initial paragraph read:

> My dear Mr. Secretary:
> It seems to me that it would be valuable in connection with air attacks on Japan and with postwar planning to obtain an impartial and expert study of the effects of the aerial attack on Germany which was authorized in enlarged scale as the Combined Bomber Offensive at the Casablanca Conference. Its value obviously depends on the quality and impartiality of the group selected to make the study as well as on the scope of the study itself.

The letter continued:

> This study should, I believe, include not merely the visible, physical destruction caused by bombing, but should embrace the direct and indirect consequences of attacks on specific industries. This would include investigating the problems created in moving evacuees from a bombed city, the burden created in the communities into which the evacuees are moved, the complications such migrations cause in transportation, food distribution, medical attention and the strains imposed on the economic structure through dislocation of industry and commerce. It would be valuable to obtain some indication, if possible, of the psychological and morale effect on an interior community, which had hitherto been

free from attack, of a large influx of evacuees with all of the attendant problems.
I suggest, therefore, that the War Department take steps to have a group selected and appointed to undertake this work as soon as possible.

Very sincerely yours,

/s/ Franklin D. Roosevelt[11]

With the receipt of this letter the survey officially got under way. The manning document of 60 officers and 60 enlisted men was promptly approved, and the search for a chairman, already a subject of much concern, began in earnest. Numerous distinguished men, eminently respected in their fields, were considered and offered the job as Chairman.[12] Each, for one reason or another, refused. On 18 October 1944, General Arnold placed a telephone call to Mr. Franklin D'Olier, approximately fifteenth on the list of prospective Chairmen. He was, he told D'Olier, sending an emissary to see him the following day to set forth the details of a very important job which he wanted him to undertake. D'Olier agreed to receive the military visitor the next day and thus began some 24 hours of decision-making on his part. Colonel Bradley J. Gaylord presented General Arnold's letter to D'Olier the next day and briefly discussed the duties of the job. He returned to

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[11] Beveridge, I, pp. 69-71; Beveridge, II contains a photostat copy of the letter.

[12] Among the men were Dean Donald K. David, Harvard Graduate School of Business, Dr. Karl T. Compton, President of M.I.T., Clarence A. Dykstra, President, University of Wisconsin, Dr. Robert G. Sproul, President, University of California. MacIsaac, pp. 73-77.

Washington with D'Olier's promise to consider the proposition and to give his answer the following day.[13]

Mr. D'Olier was as good as his word. On Friday, 20 October he called Colonel Gaylord, a former business acquaintance, and agreed to meet him that evening in a Washington hotel. On Saturday, D'Olier met with General Arnold and Secretary Lovett. After a brief presentation by General Arnold, D'Olier agreed, somewhat reluctantly to accept the Chairmanship of what, at that time, was called the United States Bombing Research Mission. On the spot, D'Olier was given carte blanche to call upon anyone he wished to assist him in the work ahead. Colonel Gaylord suggested he meet Colonel Guido R. Perera a few doors away. The two men impressed each other and D'Olier asked that Perera be assigned to him as his assistant. This done, Colonel Perera suggested that for his Vice Chairman D'Olier might want to consider Mr. Henry C. Alexander.[14] Since they were long-time friends, Secretary Lovett happily agreed to contact Alexander and request that he join the survey. Alexander telephoned his acceptance to D'Olier the following Monday.

The job of organizing the survey itself began the following

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[13] Letter, Arnold to D'Olier, 18 October 1944, Beveridge, II. Mr. D'Olier was, at the time, president of Prudential Life Insurance Company, Arnold, p. 490-91.

[14] Biographical sketches, pictures and business backgrounds on all key personnel involved in the Survey can be found in Beveridge, I, pp. 401-28.

Wednesday, when D'Olier and Colonel Perera met at the Pentagon to map out their plans. They were joined there by Mr. Alexander. As the three saw the project ahead, it could best be handled by dividing up the work into several divisions with a civilian at the head of each one. Each of these directors, D'Olier decided, would be given the same freedom of action that General Arnold had given him, subject to the general guidelines of the survey itself. D'Olier visualized his organization as something akin to a holding company, each of which operated autonomously but with him as the guiding head. This became the guiding philosophy of the survey for the rest of its existence. Within a week the three men had contacted, and persuaded to accept five men to head up the Divisions. They were: George W. Ball, Transportation; Paul H. Nitze, Ball Bearing and Machine Tool Division; Dr. Harry L. Bowman, Physical Damage Section; Mr. J. Fred Searls, Jr., Steel and Munitions Division; and Dr. Rensis Likert, Morale Division. These men, plus the three directors, formed the nucleus of the survey. As these men met, other well-qualified men were suggested and as time passed, added to the survey staff. Among these were Mr. Theodore P. Wright, Aircraft Division; Mr. Robert P. Russell, Oil Division; Dr. J. Kenneth Galbraith, Economic Effects Division; Colonel Frank A. McNamee, Jr., Civilian Defense Division; and Judge Charles C. Cabot, Secretariat.

On 4 November 1944, the final organizational papers were

received from Secretary of War Henry L. Stimson and the United States Strategic Bombing Survey, (USSBS) the title under which the organization has become famous, was officially born. Some time has been taken to detail the formation difficulties of the Survey of which General Anderson was such an important part. This is done advisedly because the men Anderson worked with, and for, helped to color his opinions and he theirs. Work on the Survey was well underway when Anderson joined it and it is worthwhile to look briefly at the circumstances surrounding Anderson's move from Deputy Commanding General for Operations of Eighth Air Force to Chairman of the Board of Military Advisors for the Survey.

General Arnold informed General Spaatz that the Survey was finally formed, and that Mr. D'Olier planned to leave for England in the immediate future at which time Spaatz was to see that he was introduced to all the military, and their British counterparts, that could be of any assistance to him. Arnold further informed Spaatz that the Survey was set up independently and would report directly to the Secretary of War. "The definitive findings and conclusions of the Survey," Arnold continued, "will be made by Mr. D'Olier and the senior civilian members of the staff. The Survey is not an Air Force organization. However, its findings will be of great value to the Air Forces immediately in the air war against Japan and ultimately with respect to policy and overall planning."[15]

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[15]Letter, Arnold to Spaatz, 3 November 1944, Beveridge, II.

After a quick visit with General Fairchild who provided a background fill-in for D'Olier on the basic precepts of strategic bombing, he, Colonel Perera, Mr. Alexander, and Ball, Nitze, Searls, Bowman, Likert and other military personnel left by plane for London arriving there 6 November 1944. They headquartered at 20 Grosvenor Square in London and spent the next two days getting acquainted with Colonel Koenig's earlier efforts at organization. Then began a round of visits to various headquarters in the London area. First to Headquarters USSTAF where they met Major General Fred L. Anderson, Deputy Commanding General for Operations of USSTAF. On 13 November, D'Olier and group visited PINETREE, for a meeting with General Doolittle and Orvil Anderson. The latter did a majority of the briefing, just as he had done on many other occasions when distinguished visitors passed through. Now that the air war had entered a new and less demanding phase, the incidence of these VIPs was becoming much greater. Little did Anderson know at the time of the great impression he made on D'Olier and the rest of his staff. The latter group did not pause long and were soon airborne for General Spaatz's headquarters at St. Germain-en-laye near Paris. During the visit there, Spaatz took D'Olier and Alexander over to SHAEF headquarters for a brief meeting with General Eisenhower. By the time the traveling group had returned to London, authorization had been received to increase the manning of the Survey to 300 officers, 500 enlisted men, and 300 civilians. In seven months the manning had gone

from 60 to 300. It would go much higher before the Survey had finished.

The first organizational charts of the Survey set up the various Divisions as already enumerated and simply indicated that at some time there would be a division to be known as the Military Advisory Board, but not, as of late 1944, manned. By 18 March 1945, D'Olier's plans had taken sufficient shape and the experience of the Survey teams in following the armies across Europe were such that the organizational chart approved as of that date created a Military Advisors section reporting directly to D'Olier and Alexander. Brigadier General E. P. Sorensen, who joined the Survey staff in January 1945, was assigned to the post of Senior Military Advisor, replacing Colonel Koenig.[16] Sorensen was to perform the vital function of guiding the hand-picked group of civilian specialists through the maze of military terms, tactics, strategy and, not in the least, interpreting the perils of combat operations as they would, and did, affect the outcome of the bombing raids. D'Olier and Alexander had recognized early that they did not have the background to properly assess the tactical and combat operational problems inherent in high-altitude bombing in the bad weather over Europe. It is for this reason that they both pushed for a board of senior

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[16] Previously considered for the post were Major General Grandison Gardner, whom the Army refused to release and Brigadier General C. P. Cabell, then in Italy, who declined because of his role in drafting the C.B.O. MacIsaac, p. 98.

military personnel, skilled in this area, who could advise the civilian Directors in evaluating the findings of the field survey teams. As an indication of the interservice makeup of this group of advisors, the famous explorer Rear Admiral Richard E. Byrd was assigned to the group. It was this group Anderson was soon to head.

Mr. D'Olier, having returned to Washington in late November to complete personnel requisitioning, flew back to London and the rapidly-growing Survey organization. Facing him was the difficult job of organizing the small, five-to-ten-man survey teams that were to take the field in actual search of key personnel and important records as well as in evaluation of the actual damage done by bombing. Not only had the teams to be formed and supplied with interpreters, but it was necessary to provide them with some sort of standardized guidance to govern their actions and to assist them in looking for the important data upon which the Directors would have to base their Survey reports. Each of the Directors had to receive from each of their Survey teams in the field, complete data on each of several thousand targets selected for study by the Survey. Vital to the complete study of each target was weather at the time of attack, number of planes involved, type of bombs used, USAAF or RAF attacking, time of attack, production mission of target, workers present at time of attack, type, kind and amount of materials present, significance of industry in overall German economy, pre- and post-production capacity, effect upon morale, upon military

forces and upon civilian consumption, casualties, absenteeism, damage to buildings, enemy ground and air response to the attack(s), pre- and post-attack dispersal attempts by Germans, rate of recovery of output, long-run cumulative effect of the raid damage, effect of damage upon allied industries, effect of the raid on civilian functions, upon transportation and the time required to repair the physical effects of the damage. There were other questions that applied to specific Directorates which had to be incorporated into the standard guidance sheets given to each Survey field team. While the sheets were very comprehensive, considerable latitude was given the team chiefs because of the high quality of personnel recruited for this type of duty--mostly civilian technicians and production experts.[17]

Field teams took the guidance sheets, a list of targets within their specialties, requisitioned a jeep, the necessary personal equipment including side-arms, and headed for the Rhine River along with the advancing Allied forces. There were many acts of heroism among the various team members as they in some cases arrived at a target along with, or even ahead of, the advancing armies. Once at a target they would examine records, interview management personnel, compile data based upon information received and pass on any related information concerning other targets to other field units. Some teams went directly

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[17] Beveridge, II, contains copies of several guidance sheets drafted prior to the establishment of the final criteria, as well as an 18 page guide put out to all Directors by Alexander on 28 April 1945.

to German Ministries and their subordinate headquarters to confiscate, digest, microfilm and correlate the information from the highest sources possible. Still other teams sought high German officials for personal interviews on the effect of bombing on the Third Reich. In April 1945, one USSBS Spearhead team reported very graphically on the dangers inherent in following so closely the advancing armies.

> In making our search for records it was necessary to crawl around on our stomachs; otherwise we would have exposed ourselves through the windows and drawn fire from the Germans. This worked out pretty well because most of the records were on the floor anyway.[18]

The Survey historian thoughtfully included in his Appendix volume one trip report made by a Spearhead team which flew into Berlin on 17 July 1945. Colonel Ames, who had played such an instrumental part in organizing the Survey under General Spaatz, was the team chief and he was accompanied by two officers and two enlisted men. Berlin was alive with VIPs due to the Potsdam Conference that had begun the day previously. The six-page team report reads like a James Bond story in detailing the ferreting out of high officials in the Ministry of Production of the late Third Reich. In one case, important papers on the effect of the air war upon German production were still in a safe at the Air Ministry. That building proved to be in the Russian Zone and occupied by a Russian unit. With the combination of the safe and a diagram of the location of it, two members of the team gained entrance to

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[18] As quoted in MacIsaac, p. 116.

the building, opened the safe, removed the valuable papers and walked out of the building under the noses of the Russian guards. It was a feat of which television scripts are made. In a second attempt to do the same thing in another building, the team found all the safes blown open and upon inquiry to the Russian lieutenant in charge, found that all the records had been removed. Permission to see them was denied until the Russian colonel returned. The team reporter then stated disgustedly that the colonel was "not available," and that he continued to be not available on subsequent visits.[19]

The sight of the destruction and rubble created in a city as heavily bombed as Berlin had been made a profound impression on the team. The recorder added a paragraph to his report which, while not immediately germaine to the topic at hand, does give a good first-hand description of the conditions in which many of the Survey teams worked.

> . . . we drove through the heart of the administrative section of Berlin, along the Wilhelmstrasse past the Reich's Chancellry, where a group of Americans, British and Russians were about to be taken on a guided tour through the famous bunker where Hitler, Eva Braun and the Goebbels family are supposed to have died; on to Unter den Linden, past the Adlon, through Pariser Platz with the ruins of the French Embassy (which until it was bombed out housed the Speer Ministry) stared across at the ruins of the American Embassy; through the Brandenburg Gate, still relatively intact, but looking the worse for wear, and into the Tiergarten. All of this section of the city is in utter shambles. Those buildings that have not been turned into a heap of rubble stand roofless, partially walless, gutted by fire, beyond possible repair.

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[19] Daily Record of USSBS Spearhead Team, Berlin, 16 July 1945, p. 4, in Beveridge, II.

> The Tiergarten looks like a no-man's-land. Its trees have been stripped of all but the largest branches, and are leafing from the trunks. As elsewhere in the city the grassplots now contain the bodies of many Russian and German soldiers who fell in the street fighting. Perhaps more grotesque than anything is the remains of Berlin's statuary, of which there was a plethora; horses without their former riders, figures without heads or limbs.[20]

As these reports were made, and additional raw data collected, it was returned to London where the hand-picked Directors and their respective staffs at 20 Grosvenor Square (and by now several adjoining buildings) digested them and tried to come up with the best conclusions possible based upon the data available. It was not the most scientific of operations; it really stood in the realm of being a field expedient, yet the end result of the endless hours of pouring over statistics has provided the only such assembly of material available with the exception of the British Bombing Survey Unit (BBSU) which is admittedly lacking in scope and comprehension when compared to USSBS. The American organization included capabilities for cross-checking data and for relating such things as plant attendance records to production levels. USSBS could, and did, put qualified experts on the scene to make vital initial findings, the data from which was funneled into a central point where more, equally capable personnel were able to draw upon their own experience to put the pieces together in a meaningful manner.

As already noted, the amount of data collected was monumental, but of almost equal interest to the historian, if not of paramount concern

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[20] Ibid., p. 3.

to the USSBS Directors, is the wealth of description of the destruction throughout Germany. Not all of it can be attributed to the Combined Bomber Offensive, but it is of sufficient interest that one more excellent description is included here to help picture the conditions under which the teams worked.

> In all of the central part of Kassel there did not appear to be a single habitable dwelling or other building. The place is simply a mass of rubble. Where the people are living is beyond me except that we did see quite a few who were apparently existing in the cellars. When we were there the town had been taken only about two weeks before, and the people were just beginning to drift back and were trying to make some sense out of what they had left. . . .
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> . . . . . .
>
> Incidentally, everyone in Germany appears to be on the move. The roadsides are lined with groups of old men, women, and children, all going someplace, either carrying what things they can or pushing small carts, baby carriages, or anything that will hold what is left of their possessions. The astonishing part of it is that the people are for the most part very well dressed and appear to be in excellent physical condition. This is true of the people we saw in the cities and the people in the country. . . . Frequently large convoys of POWs go along packed solidly in huge Army trucks. We passed several POW enclosures on the way. Besides the human wreckage on the road, the ditches are full of burnt and broken military vehicles, anything from jeeps up to tanks, both German and American. All along the way, however, in spite of the evident disruption of war, the people are out tilling the fields. Everyone seems to be busy and the orchards and gardens everywhere looked very well organized.[21]

By the end of March 1945, the German Luftwaffe had all but ceased effective, concerted resistance. Some 250,000 tons of bombs

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[21] As quoted in ibid., pp. 133-34. The quote is from a letter from US Navy Commander S. P. Johnston to Theodore P. Wright, Director of the USSBS Aircraft Division, 24 April 1945.

had been dropped in that month, and in April the total tonnage fell to approximately 160,000. The air war was all but over, and the strategic war had ended earlier. Nothing further was to be gained by turning Germany's industries into rubble--there were enough in that condition already. The relaxation of the bombing created a much more relaxed atmosphere around the Eighth Air Force headquarters at High Wycombe. As a result, many of the otherwise overworked and harried officers and men found themselves without very much to do. One such was Orvil Anderson, whose excellent work in Operations was now all but ended. This fact did not escape D'Olier, who had been very favorably impressed with Anderson when the latter conducted the series of briefings for him and his staff in November of 1944 just after their arrival in England. In this General, D'Olier saw the man he needed to take over from Brigadier General Sorensen who was now, simply by necessity, forced to spend most of his time heading up the Military Services support section and very little of it advising the Directors and their staffs. Anderson fitted the job of Senior Military Advisor perfectly by virtue of his experience as a pilot, planner, leader and analyzer. Having decided it was Anderson he wanted, D'Olier promptly persuaded General Spaatz to have him reassigned to the USSBS staff. On V-E day, 8 May 1945, Anderson finished his work at Eighth Air Force and took up residence close by in the USSBS building on Grosvenor Square.

It became Anderson's immediate task to interpret, for the

civilians especially, the impact of such things as flak, pea-soup fog over a target, missed aiming points, target misidentifications, and to point out any outstanding successes in bombing difficult targets. He became, at one and the same time, an interpreter of the air war and an apologist for the parts of that war that seemed as though they should have worked, but did not. Anderson was not alone in this task. The organizational chart issued by USSBS on 8 May listed other members of the committee which Anderson was to chair. They were: General Omar N. Bradley, Vice Admiral Robert L. Ghormley, Lieutenant General Lucius DuB. Clay, Rear Admiral Richard E. Byrd, and Brigadier Generals Rupert E. Starr, Ludsen D. Worsham, and E. P. Sorensen. In addition to working with this distinguished group, Anderson headed the Military Division which was broken down into two sections, Operational Factors and Military Effects. As such he was a second-level Director (as distinguished from the civilian Directorate of Ball, Nitze, et. al. The Division, in the final organizational chart of 7 June 1945, was retitled the Military Analysis Division. Uniquely, among all the other "second-level" directors, Anderson reported to no civilian Director (except D'Olier and Alexander of course) as the chart shows, which placed him on the highest level of Directors as well as being the senior military advisor and chairman of the Advisors committee. (See Figure 1)

It was not in Anderson's character or makeup to be inactive, or chained to an office. If the activity was in Europe, and it was, he wanted

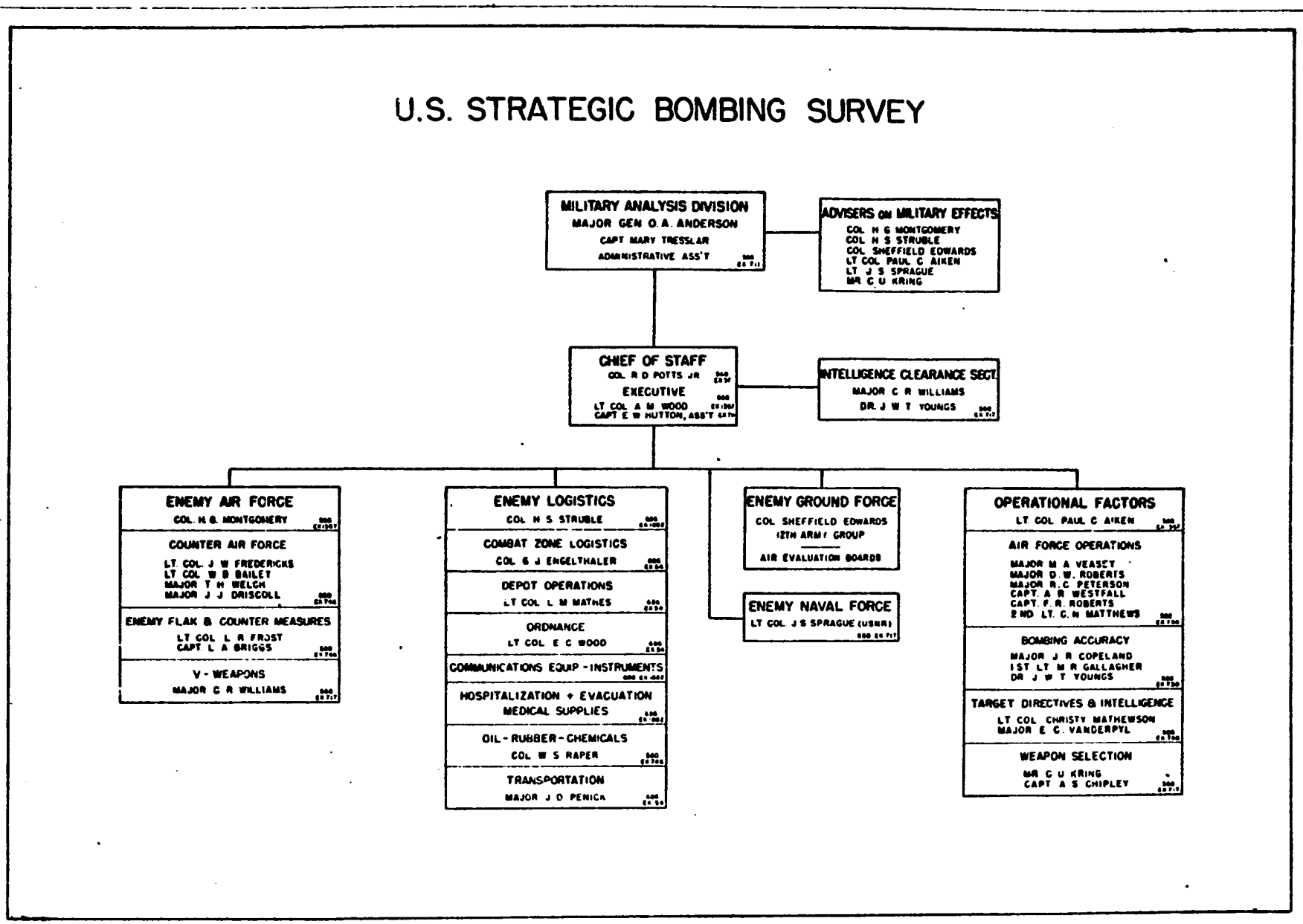
U.S. STRATEGIC BOMBING SURVEY
MILITARY ANALYSIS DIVISION
MAJOR GEN O. A. ANDERSON
CAPT MARY TRESSLAR
ADMINISTRATIVE ASS'T
ADVISERS ON MILITARY EFFECTS
COL H G MONTGOMERY
COL H S STRUBLE
COL SHEFFIELD EDWARDS
LT COL PAUL C AIKEN
LT J S SPRAGUE
MR C U KRING
CHIEF OF STAFF
COL R D POTTS JR
EXECUTIVE
LT COL A M WOOD
CAPT E W HUTTON, ASS'T
INTELLIGENCE CLEARANCE SECT.
MAJOR C R WILLIAMS
DR. J W T YOUNGS
ENEMY AIR FORCE
COL. H G. MONTGOMERY
COUNTER AIR FORCE
LT. COL. J W FREDERICKS
LT COL W B BAILEY
MAJOR T N WELCH
MAJOR J J DRISCOLL
ENEMY FLAK & COUNTER MEASURES
LT COL L R FROST
CAPT. L A BRIGGS
V - WEAPONS
MAJOR C R WILLIAMS
ENEMY LOGISTICS
COL H S STRUBLE
COMBAT ZONE LOGISTICS
COL G J ENGELTHALER
DEPOT OPERATIONS
LT COL L M MATHES
ORDNANCE
LT COL E C WOOD
COMMUNICATIONS EQUIP - INSTRUMENTS
HOSPITALIZATION + EVACUATION
MEDICAL SUPPLIES
OIL - RUBBER - CHEMICALS
COL W S RAPER
TRANSPORTATION
MAJOR J D PENICA
ENEMY GROUND FORCE
COL SHEFFIELD EDWARDS
12TH ARMY GROUP
AIR EVALUATION BOARDS
ENEMY NAVAL FORCE
LT COL J S SPRAGUE (USNR)
OPERATIONAL FACTORS
LT COL PAUL C AIKEN
AIR FORCE OPERATIONS
MAJOR M A VEASEY
MAJOR D. W. ROBERTS
MAJOR R. C PETERSON
CAPT. A R WESTFALL
CAPT. F. R. ROBERTS
2 ND LT. C. N MATTHEWS
BOMBING ACCURACY
MAJOR J R COPELAND
1 ST LT M R GALLAGHER
DR J W T YOUNGS
TARGET DIRECTIVES & INTELLIGENCE
LT COL CHRISTY MATHEWSON
MAJOR E C. VANDERPYL
WEAPON SELECTION
MR C U KRING
CAPT A S CHIPLEY

Figure 1

to be there as often as his duties would allow. There was another, quite obvious reason for his desire to get over to the continent. It was there that the results of all the wearisome hours of planning, first with the Plans section in Washington, then with COPC early in the war, and finally with Eighth Air Force, either bore fruit or were demonstrable failures. Too many hours and too much agony of responsibility were bound up in those years not to create in him what must have been an intense desire to inspect personally the ruins he had played such a vital part in creating. It was not given to many men in World War II, or for that matter in any war, to be in on the basic, original planning and present at a full-scale assessment of those plans once the victory was achieved. Anderson must have realized his vital role, although there is nothing in his correspondence that directly indicates his thinking. Reports of his individual activity are very sparse. Yet, when he later spoke to the students at the Air War College as their Commandant, he spared no effort to make sure that they fully understood the concepts of fighting the war, the strategy employed, especially in the air, and the end results as he personally had observed them. As stated, it was a rare opportunity not given to many of the most senior officers who participated. Typically, he made the most of his chances.

Anderson flew from London to the continent many times for interviews with captured German leaders. One of the most interesting of these trips involved one of the USSBS Intelligence Section's interrogation

teams--this one consisting of Captain George M. Perry, First Lieutenant Wolfgang G. Sklarz, and First Lieutenant Walter A. Steene. All three had extensive knowledge of languages and European affairs. Together, or separately as the case demanded, this section conducted most of the interviews with the prominent enemy personalities who had been captured. They usually coordinated the interviews with one of the Divisions and followed their established questionnaires. Often they were accompanied by high officers of the Survey, for whom answers were translated and from whom additional, specific questions were obtained. So it was on 10 May 1945. Anderson had barely settled in his new quarters on Grosvenor Square when an urgent call came from Lieutenant Sklarz who, with a fast-moving interrogation field team, had arrived at Flensburg on the same day the government of former Grand Admiral Karl Doenitz was being established. Armed bands of German soldiers still patrolled the streets, but in an effort to maintain law and order rather than combat. In walking through the office building serving as headquarters of the new interim government, Sklarz noticed a door marked simply, "Albert Speer." Entering, he found Speer's secretary and adjutant, and, through them, located the former Reichsminister of Armament and Production in his residence in Schloss Glucksburg, a castle of the Dukes of Holstein, close by. Here was the one man who had the complete picture of the German war economy well in hand. Additionally, he could best assess the effect of the Allied aerial bombing

upon the economy he had so recently controlled. As word reached USSBS headquarters on the 16th, Anderson and Colonel (later Major General) Ramsay D. Potts (Anderson's Executive Officer for the Military Analysis Division) along with Nitze, Galbraith and George Ball among others of the interrogation staff, commandeered a C-47 and flew to Flensburg arriving in time for lunch. After pausing briefly to eat, they joined Lieutenant Sklarz in the preparation of questions for Speer. For ten days at Speer's castle, the Reichsminister answered questions thrown at him by Sklarz. Ball wrote a three-page letter to be hand-carried to D'Olier which urged him and Vice Chairman Alexander to come over as soon as possible. In the letter, Ball related that Sklarz had obtained from Speer twenty-two letters calling upon members of former Minister's staff to turn over all records to the Survey teams. Even a review of the material at hand would take several days, Ball felt, and the other important Nazi officials also present at Doenitz's headquarters "can be of the greatest assistance to the Survey in filling in the gaps both on the economic and military effects aspects."[22] So important was the information available that neither Ball nor Anderson

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[22] Letter, Ball to D'Olier, 16 May 1945, Beveridge, II, pp. 1-3. Small wonder Ball and the others were excited. Attached to his letter was a list of the high Nazi officials available at Flensburg for interview. Included thereon were Grand Admiral Doenitz, Nazi naval chief Admiral Friedberg, Chief of Staff General Jodl, Demobilization Chief General Detleffsen, Luftwaffe chief General Christian, OKW Quartermaster chief General Toppe, and Transportation Minister and railroad system director Dr. Dorpmuller. There were several lesser officials--thirteen in all.

were willing to leave Flensburg for the regular Friday meeting of the USSBS staff at Bad Nauheim. Instead, a three-floor, fifteen bedroom house in Flensburg was requisitioned for the growing USSBS group. Another jeep was requested by return plane after which Ball concluded his letter by saying:

> On the whole, I feel that the material and personalities which have been discovered here are the most promising which the Survey has yet found. Present arrangements for exploitation of the data and interrogation of the individuals are from the Survey's point of view extraordinarily favorable. However, time is of the essence and if we do not follow up our opportunities here promptly, there is a very serious danger that the individuals will be dispersed and the data rendered unavailable. Every effort should, therefore, be made to send us as soon as possible adequate German speaking (sic) personnel together with technical assistants who can participate in the development of what I am sure is the best reservoir of information that the Survey has yet discovered.[23]

Upon receipt of such an urgent summons from Ball, D'Olier and Alexander flew immediately to Flensburg and participated in the interrogations as the Doenitz government fell and its leaders were interned.

The interrogations of Speer usually took place in the morning, at the conclusion of which the American team presented Speer with a subject, or list of subjects, such as oil, chemicals, steel production, etc. with which the questioning the next day would concern itself. Then the Americans would leave for lunch and to digest the morning's information while Speer put his aides to work gathering the data needed for the

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[23] Ibid., p. 2 and Beveridge, I, p. 105.

next day.[24]

The Reichsminister was very cooperative with the American team and actually seemed flattered at the knowledge and understanding of the German economy possessed by his interrogators. Speer spoke some English, but interpreters were always present to insure full understanding. His secretary took notes throughout the sessions and later wrote up the entire proceedings. The general demeanor of Speer impressed those present as one of "great relief that the war was over and to be able to discuss his problems with someone who actually understood and talked his language." There was no hesitancy about revealing the location of documents, but he had a marked reluctance to discuss politics or the military aspects of the war. The USSBS leaders felt themselves extremely fortunate to run into Speer so early in the research process. His personal knowledge, plus the records he made available, materially eased the data-gathering problems of USSBS and clarified quite early in the Survey's efforts, the job to be done and where and how to get it under way.

Part of Speer's cooperative attitude stemmed from his interest in what he was discussing, and his vain desire to put his case before the

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[24] The material concerning Albert Speer was obtained during an interview between the author and Major General Ramsay D. Potts, USAF Res., Washington D.C. 25 May 1970. General Potts, then a Colonel, and Anderson's executive officer, was present during most of the Speer interrogations, having flown over from London with the General.

world in the best possible light.[25] He genuinely felt that air power had defeated the economy of Germany and hence, so far as he was concerned, the German military as well. There was no air of arrogance about him in his dealing with the representatives of his conquerers. Instead, he sought their good will and full understanding of both his problems in organizing the wartime German economy and his accomplishments in sustaining it so well for so long in the face of the Allied aerial onslaught. The interrogation lasted nearly ten days.

As the questioning on the morning of the fourth day ended, Speer looked across the table at General Anderson, the man he considered greatly responsible for the aerial defeat of his country. Half-rising from his chair as a gesture of respect, he handed Anderson a handwritten letter previously prepared on his personal stationery. Its brief text, in German, was translated aloud for the General by one of the interpreters.

Herr General:

> The bombers of the Eighth American Air Force have, by their attacks on German production, finally led to its total collapse--despite desperate and brave resistance on the part of the German workers and plant managers.

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[25] Speer has just published his memoirs in which he details his efforts and frustrations as Hitler's Minister of Production. Unfortunately, he errs in stating that Major General S. E. Anderson (Deputy Commanding General for Operations at Spaatz's USSTAF headquarters) was the one present at his interrogation and not Orvil. S. E. Anderson was not present during any of these interrogations. Albert Speer, Inside the Third Reich (New York: Macmillan, 1970), p. 499.

Being forced therefore to surrender my personal weapon, I beg of you to accept it from me.

Yours,

/s/ ALBERT SPEER[26]

At the conclusion of the oral translation, Speer handed Anderson his pistol, a Walther-made, elaborately engraved, automatic pistol resembling, on a smaller scale, the American issue .45 calibre automatic pistol. The initials "A.S." were engraved on the handle of the pistol. The act was accomplished "almost like a gift" to Anderson out of respect held for him by Speer. It was Speer's recognition of defeat, not done abjectly, but as a gift from the defeated to a representative of the victorious.[27]

Near the end of May 1945, D'Olier returned to Washington for conferences, giving as the reason an illness in his family. Almost immediately, he telephoned London to summon Alexander, Ball, Nitze, Dale and Anderson to meet him at the Pentagon. He asked each to bring with him a quickly-prepared summary of the findings of the various Divisions to date, for use by the AAF and the War Department in preparing strategic bombing targets in the continuing war against Japan. Those

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[26] From a written translation provided the General at a later time and formerly in the possession of Mrs. Anderson. The author was privileged to see both the letter and the pistol while visiting Mrs. Anderson's home.

[27] Interview, General Potts, 25 May 1970. In April 1970, Mrs. Anderson presented both the pistol and the letter to the Air Force Museum, Wright-Patterson AFB, Ohio where they are now on public display.

called left London on 7 June, arriving in Washington the next day. On the 9th they assembled with the Joint Target Group (JTG) then at work selecting strategic targets for the aerial bombing of Japan already underway. On the 11th the group was interrogated by some 50 to 60 officers representing all the services, and on the 12th, 14th, and 15th they met again with the JTG. All of this would have been beyond the thus-far meager USSBS experience of Anderson had it not been for his extensive planning and operational background. Also, Anderson had done much of the World War II initial planning for the Pacific theater while he was assigned to AC/AS, Plans in 1941. There were some areas of disagreement between the conceptions of the JTG and the USSBS group with whom they met. Chiefly, the arguments revolved around the proper priority to place upon aerial attacks of Japanese air frame factories. The Survey's tentative conclusions, written and handed to Secretary Lovett, did not state equivocally the priority that should be followed in strategic bombing. The JTG felt it was more important to go after the Japanese inventory position rather than her production facilities since they had a greater inventory of supplies and equipment than had the Germans. The Survey's hastily-assembled recommendations, on the other hand, called for concentration on both production and upon transportation, in the belief that Japanese transportation was even more vulnerable than the German. By bombing power installations and transportation, the Survey felt, almost a quarter of the Japanese industry could

be knocked out; a much speedier way than the incendiary bombing of industrial areas the JTG had planned. The Survey group felt the JTG should make the final decisions as to priority of the targets to be hit but that one target should be finished before another complex was attacked. The air leaders of the war in Europe, Spaatz and Eaker, generally agreed with the Survey, especially Eaker who sent a memorandum to General Arnold backing up the Survey's opinions. All of the members of the Survey refused to make their recommendations final at this point, and reserved the right to change them if subsequent data called for such change. Nonetheless, most of the Survey ideas were incorporated in the target selections for the air war in the Pacific.

General Arnold, who had been in the Pacific most of June while the target hassel had been under way, returned to Washington in early July. There he met with D'Olier and Nitze and indorsed their interim recommendations which had been wired to him while he was away. He stated that he had shown the report to Admiral Chester A. Nimitz and General Douglas MacArthur. Both of these leaders of the Pacific war were interested in the Survey recommendations and had inquired about the possibility of the Survey doing the same kind of work on Japan. The AAF had anticipated this sort of a request and Brigadier General Grandison Gardner, already familiar with the USSBS concept after participating in some of the recent discussions between the JTG and the Survey leaders, was on his way to the Pacific to organize an evaluation board. He was

intercepted, asked to return to Washington, and there joined D'Olier and his group as they returned to England on 21 July.

Anderson returned to England with the rest of the group, but only for a short period. In August 1945 the office of the Chairman and many of the key personnel in the other Directorates began to conclude the data-gathering function of their work and return to Washington, D.C. for the writing of the final reports. Most of the USSBS stateside offices were located in a long, barracks-style building known as the "AAF Annex" at Gravelly Point, Virginia, adjacent to what is now Washington National Airport. There the relocated European Survey group settled down to write the final reports on air power in the European war.[28]

In many respects, the organizational genius of the Directors was felt most during the writing period. Assimilating the mass of data and drawing from it a comprehensive picture of the effect of a new medium of war cannot have been easy. It is a tribute to each of the Directors that the 208 separate reports that together make up the entire Strategic Bombing Survey for Europe are as comprehensive and definitive as they are. Reports 1, the "Over-all Report" and 2, the "Summary Report" from the Chairman are brief but complete. No one of the Survey leaders felt he had exhausted the material or his subject. They had all agreed with D'Olier early in the Survey's existence that the best report possible had to be written in the shortest possible time. Consequently,

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[28] Beveridge, I, pp. 115-19.

most of the intensive investigation took place from V-E day to late July, and the writing was done in August and September 1945. Mr. Alexander, the Vice-Chairman, was the man responsible for the writing of the Chairman's reports. This work accomplished with publication on 30 September 1945, Alexander left the Survey, his place as Vice-Chairman being taken by Mr. Paul Nitze who began planning immediately for the Pacific effort. Mr. Alexander remained as Vice-Chairman along with Nitze, but in name only.

Anderson's Military Analysis Division was responsible for Reports 59 through 64, and he had a direct hand in the writing of every one of them. In addition to these almost exclusively military reports, he read and advised the other Directors in the preparation of their work.[29] Apparently he enjoyed the work, and the opportunity to vindicate the theories he had worked so intimately with in the prewar years. Mrs. Anderson joined him in Washington as soon as he returned, and they reoccupied their home at 449 Argyle Drive in Alexandria. Together once more, they, like so many million others after the war, simply began again where they had left their lives in 1943, but only for a brief while.

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[29] The Anderson reports are entitled:
59. The Defeat of the German Air Force
60. V-Weapons (CROSSBOW) Campaign
61. Air Force Rate of Operation
62. Weather Factors in Combat Bombardment Operations in the European Theater
63. Bombing Accuracy, USAAF Heavy and Medium Bombers in the ETO
64. Description of RAF Bombing

As the writing of the European reports came to a conclusion, D'Olier made sure his staff and workers were adequately rewarded for their excellent work. Four Survey personnel had been killed by enemy action and four more wounded. By way of decorations General Anderson received the Bronze Star and a Letter of Commendation from the Secretary of War. The Bronze Star was later rescinded in favor of a higher decoration, the Legion of Merit, to include his work in both Europe and the Pacific.[30]

While it is not the purpose of this chapter to cover the results of the Strategic Bombing Survey to any great degree, it is helpful to discuss briefly the salient findings of the Survey in the light of their justification, or nonjustification, of the then-accepted theories of aerial bombardment. It was in this area that air leaders like Spaatz and Arnold, and Anderson too, expected the Survey to do the most good for the AAF of the future. Perhaps the most famous part of the Chairman's "Over-all Report" and the most quoted as well, is the introduction to the Conclusion:

> . . . Allied air power was decisive in the war in western Europe. Hindsight inevitably suggests that it might have been employed differently or better in some respects. Nevertheless, it was decisive. In the air, its victory was complete; at sea, its contribution, combined with naval power, brought an end to the enemy's greatest naval threat --the U-boat; on land, it helped turn the tide overwhelmingly in favor of Allied ground forces. Its power and superiority

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[30] Beveridge, I, pp. 432, 434; also File, "Awards, Commendations and Decorations," Archives 168.7006-5.

> made possible the success of the invasion. It brought the economy which sustained the enemy's armed forces to virtual collapse, although the full effects of this collapse had not reached the enemy's front lines when they were overrun by Allied forces. It brought home to the German people the full impact of modern war with all its horror and suffering. Its imprint on the German nation will be lasting.[31]

The Report ends with nine general conclusions which reflect the consensus of the Survey:

"The German experience suggests that even a first-class military power--rugged and resilient as Germany was--cannot live long under full-scale and free exploitation of air weapons over the heart of its territory." The Survey found further that the use of air power had "mortally wounded" Germany, and so damaged the economy of the nation that its collapse, and soon that of the field armies, was imminent, even though it had not done so by V-E day. The second point emphasized the significance of the domination of the air over Germany; the third the helplessness of the Germans to halt the air offensive (a point much in question in the fall of 1943). The fourth praised the mental reaction of the German people to air attack; the fifth remarked about the importance of the careful selection of targets which should, in general, be industries upon which other industries depend. The sixth simply stated that during all the bombing no indispensable industry was ever completely put out of commission and reattack was necessary. The lack of strategic

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[31] USSBS, Over-All Report (European War), (Washington, D. C., G.P.O., 1945, p. 107.

intelligence in the determination of targets was the seventh listed conclusion, and praise for Allied research, development and production which allowed an eventual overwhelming superiority in planes and well-trained crews was eighth. Mention was made of the fact that, in this area, the Germans, with the V-1 and 2 and the jet aircraft, were ahead of the Allies in many technological aspects. Finally, the Report acknowledged what any man who fought the air war of the skies knew already and only too well--what achievements there were came about "only with difficulty and great cost in men, material, and effort."[32]

Mr. Alexander included at the end of the Report a short section entitled "Of the Future." In it he summarizes the concern of the AAF leaders about the future and the effect the Survey would have upon it. There could be no question that Arnold, Spaatz, Eaker, and Orvil Anderson too, were pleased with the results when they read:

> The air has become a highway which has brought within easy access every point on the earth's surface--a highway to be travelled in peace, and in war, over distances without limit at ever-increasing speed. The rapid developments in the European war foreshadow further exploration of its potentialities. Continued development is indicated in the machines and in the weapons which will travel the reaches of this highway. The outstanding significance of the air in modern warfare is recognized by all who participated in the war in Europe or who have had an opportunity to evaluate the results of aerial offensive. These are facts which must govern the place accorded air power in plans for coordination and organization of our resources and skills for national defense.[33]

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[32] Ibid., pp. 107-08.

[33] Ibid., p. 109.

The foresight of Arnold and Spaatz began to pay off as the other USSBS reports were published. However, it was impossible, in the face of the evidence at hand, and the Survey itself for that matter, to say that strategic air power alone won the war. Writing in Foreign Affairs later, Spaatz was forced to admit, and did so gracefully, that "Strategic Air Power could not have won this war alone, without the surface forces." He did qualify this admission by continuing, "Air power, however, was the spark to success in Europe. And it is interesting to note that Japan was reduced by air power, operating from bases captured by the coordination of land, sea, and air forces, and that she surrendered without the expected invasion becoming necessary."[34] If the point that the air leaders had hoped to make, that air power can be completely decisive, fell during the desperate struggle to mount an offensive in a new medium, at least they could take great comfort in the fact that air power had come of age in World War II, and there was no longer any question of acceptance; now only in the degree of acceptance. Before that question could be decided, if indeed it ever could, there was a war with Japan to be concluded. The establishment of air bases in the Marianas Islands enabled the long-range B-29s to begin strategic bombing of the Japanese industrial heart.

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[34] Carl A. Spaatz, General USAF, "Strategic Air Power: Fulfillment of a Concept," Foreign Affairs, XXIV No. 3 (April 1946), p. 386.

CHAPTER VIII

THE STRATEGIC BOMBING SURVEY--PACIFIC

The time necessary to make a thorough survey of the damage wrought to Europe by the bombs of the American and British air forces was simply not available. The leaders of the Survey had recognized this from the beginning and organized their field teams accordingly. Partly to insure that nothing happened to priceless records, and also in the interest of expeditious accomplishment, the teams followed the Allied infantry forces closely in their sweep across Europe, and in some cases already referred to, got ahead of the advancing armies. This action proved profitable to the Survey as a whole, and when D'Olier and his staff, including General Anderson, were called back to Washington toward the end of May 1945, they had considerable data upon which to base their report to the Joint Target Group. The AAF was prepared, at least in many cases, to take the recommendations of the Survey and incorporate them into the target selection then underway for Japan. The Survey staff repeatedly emphasized that the findings they were reporting were not complete and should be so construed, but the greatest consideration of

the nation, as well as its military and political leaders in May of 1945, was the end of the war with Japan. No one foresaw a long struggle, but many military men expected that the only way to end the war was by an invasion of the Japanese home islands in the same manner that the U.S. forces had leapfrogged all the way across the Pacific. Given the past few years of the war, this was not an unreasonable expectation--except to a few people, and they, once again, were the nation's air leaders.

These leaders were looking hopefully to the Survey's interim report being given that last week of May for a basis from which to launch a campaign to knock Japan out of the war by the use, and to them exclusive use, of air power. As noted, the Survey, as it was finally written, frankly admitted that air power alone did not win the European war, and in this the Survey report was apparently a great disappointment to Arnold, Spaatz, Anderson, and many others. The air leaders knew they had nothing to apologize for in the overall performance of their new weapon in Europe, even though it might not have accomplished all that its most ardent pre-war doctrinaires had at one time said it could. There was yet one more opportunity to prove their point--Japan. Japan had to be defeated from the air if the prewar dogma was to become anything more than a pipe dream. If the Air Forces in the postwar era were to enjoy anything like parity with the Army and the Navy, let alone enjoy the sanctity of separate but equal status, aerial bombardment had to triumph--almost alone--over Japan.

The European Survey had been at real work less than a year, but it was to the leaders of that team of specialists that the Army Air Forces now turned. The answer was almost immediately obscured in the wrangling over which Japanese industrial target complexes were most deserving of the priority of bombs. The geography of the Pacific area had already cast the war in a totally different light than that of Europe. Some have said that an informal agreement at the beginning of the U.S. involvement in World War II, divided the war theaters, giving the Army predominance in Europe since it was a land war, and the Navy the pre-eminent role in the Pacific. Certainly it worked that way in Europe, and in the early days of the Pacific island-hopping it seemed the Navy was the predominant service. General MacArthur's forces fighting it out in the jungles of New Guinea and Lieutenant General George C. Kenney's Fifth Air Force took violent exception to this turn of events and usually received less than their fair share of both supplies and publicity. Nevertheless, unless one was with MacArthur or Kenney at this time, it was primarily a Navy show in the Pacific--if for no other reason than the basic consideration of geography. Making this assertion should in no way be construed to take away anything from the magnificent accomplishment of the two mentioned leaders and the thousands of men who served under them.[1]

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[1] MacIsaac, p. 187. While Major MacIsaac subscribes to, and makes a good case for, this idea, there exists no written record currently available, of such an agreement. The geographical logic of the idea, on

Service rivalries aside, it was the prosecution of the war with Japan that most occupied the Air Forces' leaders in June of 1945. Once the compromises had been reached the Survey group began to return to Europe to conclude the Survey work there. In his conversations with General Arnold in early July, D'Olier had been pressed by the General to conduct a similar survey for the Pacific area. D'Olier in turn contacted Henry Alexander, his Vice Chairman, requesting him to organize a Pacific Survey and to continue to serve as his deputy. While still in London in late July, two of the Survey staff were delegated to organizing a similar group for the Pacific and to securing volunteers from among those most needed, military and civilian, to go into Tokyo after the war. Some could not go, or could not be released from the civilian concerns from which they were at the time on temporary loan. Others, due to unsatisfactory performance, were not wanted. By 2 August the initial organization for the Pacific Survey had been completed. With the behind-the-scenes maneuvering completed, and the war abruptly ended by atomic bombs. President Harry S. Truman moved rapidly to officially create the new Survey organization.[2]

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the surface at least, seems irrefutable--until one considers the bloody fighting on New Guinea that MacArthur was involved in before Guadalcanal and Kenney's air support of that same operation.

[2] James Beveridge (Major Air Corps), "History of the United States Strategic Bombing Survey (Pacific), 1945-46," unpublished military history, 2 vols. (Washington D.C. 1946). These two volumes treat the Pacific Survey just as the two volumes mentioned in the previous chapter treated the European Survey. Volume I is in narrative form

The President's letter to Mr. D'Olier was dated 15 August 1945. It reviewed briefly the origin of the European Survey and went on to say:

> I believe it would be similarly valuable for our post-war planning and future policies to have the same kind of impartial and expert study of the effects of our aerial effort in the war against Japan. This study would include the effects of all types of air attack.[3]

The commission from the President to D'Olier differed from the European original in two respects. The former had commissioned the Survey to examine the effects of strategic bombardment only. The Pacific commission specifically stated ". . . all types of air attack." While it is quite probably true that President Truman had in mind the atomic bombs that had been dropped, this all-inclusive phrase was to open the proverbial box to all sorts of interservice disputes before the Survey's work was complete. The second difference in the commission was the President's instruction that a copy of the report was to go to the Secretary of War (as had the European one) and the Secretary of the Navy. Both Secretaries would be directed, the President stated, to provide all possible assistance. This seemingly innocent, and even possibly unintentional, involvement of the Navy in what had been primarily a survey of the strategic aspects of aerial bombardment was probably done as a

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while Volume II contains originals or copies of documents or letters arranged in chronological sequence but unnumbered by page. To avoid any confusion, hereafter citations of these two volumes will be Beveridge, III and IV.

[3] Letter, Truman to D'Olier, 15 August 1945, Beveridge, IV.

bureaucratic courtesy. Whatever the true reason, and it may never be known, the Navy became a vital part of the Pacific Survey. Its aerial activities in the Pacific came under evaluation thereby, and, with somewhat of a self-preservation axe of their own to grind, they entered into what rapidly became a battle of words, both written and spoken, that tainted the otherwise excellent work of the hundreds of dedicated people both AAF and Navy on the Survey team.[4]

Mr. D'Olier replied to the President's letter on 23 August 1945, the day after his return to the United States. He had already dispatched a spearhead team to Washington en route to Tokyo including twenty-two research experts, ten photographers and ten microfilm experts. An organizational chart was drawn up soon after and changed very little from the final chart issued on 1 November 1945. Most noticeable among the changes made was the addition of Mr. Paul Nitze's name as Vice Chairman, a position he shared with Mr. Alexander who had to remain in the United States due to the press of business, but who gave of his time and talents nonetheless. Most of the former directors were included, and all went to Japan except Dr. Wright (Aircraft), Mr. Searls (Munitions), and Dr. Likert (Morale). Mr. George Ball returned to private law practice and Mr. R. P. Russell returned to his work with Standard Oil Company. Dr. Monroe E. Spaght took the latter's place while Dr. (Brigadier General) Louis R. Thompson was added to the Board of Directors later.

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[4] Ibid., and Beveridge, III, p. 4.

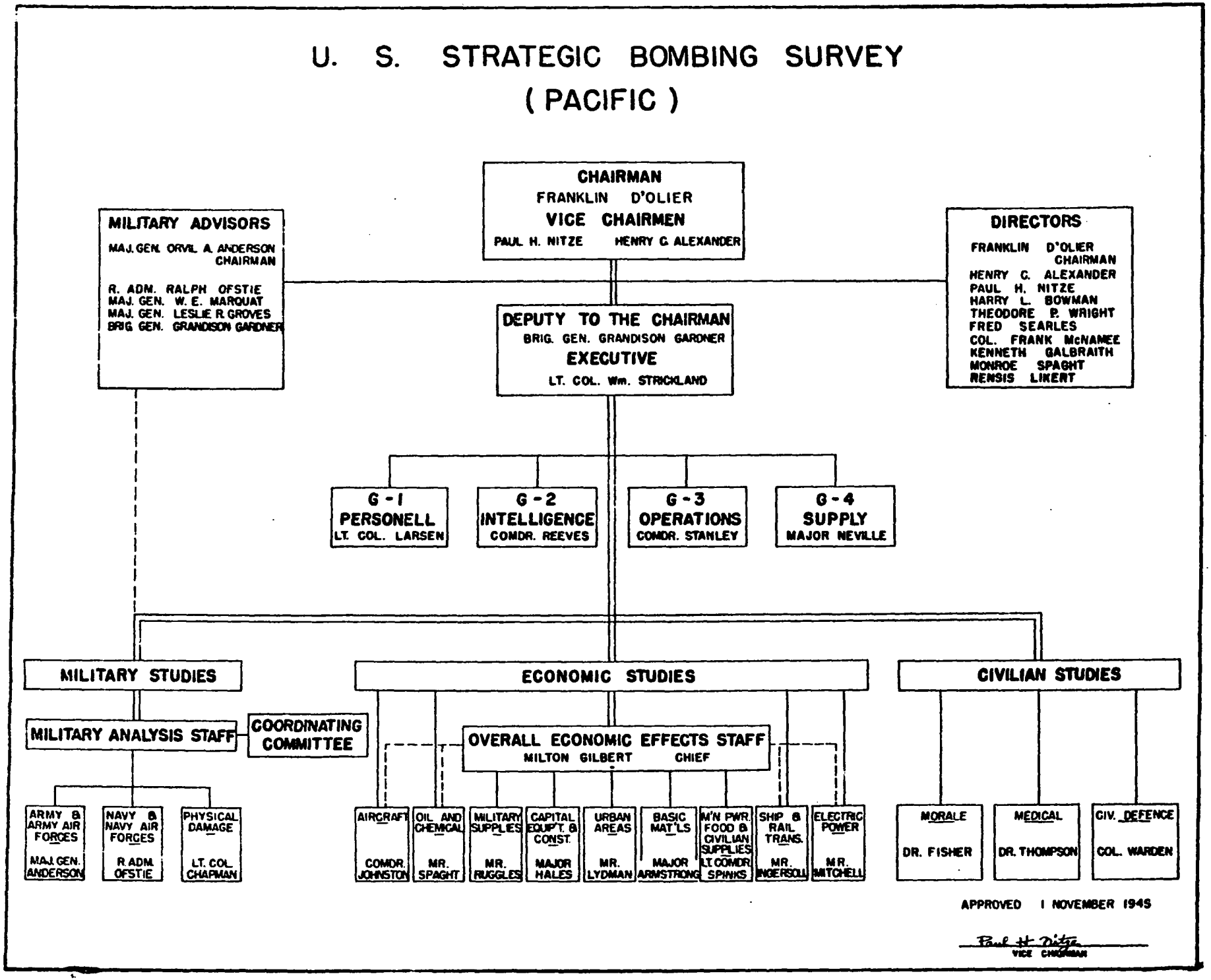
U. S. STRATEGIC BOMBING SURVEY
(PACIFIC)
CHAIRMAN
FRANKLIN D'OLIER
VICE CHAIRMEN
PAUL H. NITZE
HENRY C. ALEXANDER
MILITARY ADVISORS
MAJ. GEN. ORVIL A. ANDERSON
CHAIRMAN
R. ADM. RALPH OFSTIE
MAJ. GEN. W. E. MARQUAT
MAJ. GEN. LESLIE R. GROVES
BRIG. GEN. GRANDISON GARDNER
DIRECTORS
FRANKLIN D'OLIER
CHAIRMAN
HENRY C. ALEXANDER
PAUL H. NITZE
HARRY L. BOWMAN
THEODORE P. WRIGHT
FRED SEARLES
COL. FRANK McNAMEE
KENNETH GALBRAITH
MONROE SPAGHT
RENSIS LIKERT
DEPUTY TO THE CHAIRMAN
BRIG. GEN. GRANDISON GARDNER
EXECUTIVE
LT. COL. Wm. STRICKLAND
G-1
PERSONELL
LT. COL. LARSEN
G-2
INTELLIGENCE
COMDR. REEVES
G-3
OPERATIONS
COMDR. STANLEY
G-4
SUPPLY
MAJOR NEVILLE
MILITARY STUDIES
ECONOMIC STUDIES
CIVILIAN STUDIES
MILITARY ANALYSIS STAFF
COORDINATING COMMITTEE
OVERALL ECONOMIC EFFECTS STAFF
MILTON GILBERT CHIEF
ARMY & ARMY AIR FORCES
MAJ. GEN. ANDERSON
NAVY & NAVY AIR FORCES
R. ADM. OFSTIE
PHYSICAL DAMAGE
LT. COL. CHAPMAN
AIRCRAFT
COMDR. JOHNSTON
OIL AND CHEMICAL
MR. SPAGHT
MILITARY SUPPLIES
MR. RUGGLES
CAPITAL EQUIP'T & CONST.
MAJOR HALES
URBAN AREAS
MR. LYDMAN
BASIC MAT'LS
MAJOR ARMSTRONG
M'N PWR. FOOD & CIVILIAN SUPPLIES
LT. COMDR. SPINKS
SHIP & RAIL TRANS.
MR. INGERSOLL
ELECTRIC POWER
MR. MITCHELL
MORALE
DR. FISHER
MEDICAL
DR. THOMPSON
CIV. DEFENCE
COL. WARDEN
APPROVED 1 NOVEMBER 1945
Paul H. Nitze
VICE CHAIRMAN

Figure 2

Named as military advisors to the survey were General Anderson, Rear Admiral Ralph A. Ofstie, USN, as senior Naval advisor, Major General Leslie R. Groves, USA, formerly the head of the atomic Manhattan Project, and Brigadier General Grandison Gardner, USA, who became Deputy to the Chairman. Rear Admiral Richard E. Byrd, USN, was named also to the group of advisors but did not function actively. Anderson, already praised for his excellent work on the European Survey was renamed Chairman of the Military Advisors. The importance of the military personnel was increased over that of the European Survey when the number of civilians was reduced because of lack of need and reluctance to continue serving, from 260 to approximately 150.[5] As early as July of 1945 D'Olier had told Alexander that he felt the military personnel should be used primarily. He felt that ". . . a relatively small group of civilians using a large number of the young, able officers that we have in our crowd could probably handle the job."[6]

Once organized it took very little time to set the Pacific Survey in motion. By 1 September a team was on the island of Guam recruiting military personnel for movement into Japan proper and throughout the Pacific islands. On the 20th of September the rapidly growing

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[5] Numerous temporary consultants used by the Survey raise or lower the total depending upon which set of figures is used. MacIsaac, p. 164, fn 1.

[6] Ibid., p. 105, fn 1.

Survey staff moved into the Meiji Building in downtown Tokyo.[7] There the entire staff gathered, either directly from Europe or from the USSBS offices in Washington. From there field teams left to blanket the home islands of Japan and to visit all of the important islands in the Pacific. By virtue of its charter, the Survey was an evaluation of air power throughout the Pacific--not just of the Army Air Forces' contribution but the Navy's carrier air as well. Because of this the final results included not only the effect of strategic bombing upon Japan, but the effect of all air power in general throughout the Pacific area--not exactly the intentions of General Arnold when he asked the Survey to extend its European work into the Pacific.

Before taking up General Anderson's work with the Pacific Survey, it will be beneficial to take a brief look at the strategic air war in the Pacific area. No mention will be made here of the Navy's air effort, valiant as it was, since it has been well documented elsewhere.[8] Equipped with B-17s and B-24s like their counterparts in Europe, the Fifth Air Force under the leadership of Lieutenant General George C.

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[7] Major Beveridge, the official historian, includes some sly remarks about the American inability to adjust to Japanese bathroom accommodations in the building, and the unabashed presence of the Japanese cleaning women in these facilities when occupied by Americans. Beveridge, III, pp. 17-18.

[8] For a more complete story of the Navy's air war in the Pacific see Admiral J.J. Clark, Carrier Admiral (New York: McKay, 1967); Samuel Eliot Morison, Two-Ocean Navy (Boston: Little-Brown, 1963); E. B. Potter and Fleet Admiral Chester W. Nimitz, Triumph in the Pacific (Englewood Cliffs, N.J., Prentice-Hall, 1963) among many others extant. Best of all is U.S. Naval Aviation in the Pacific (Washington: GPO, 1947).

Kenney provided the land-based air support for General MacArthur's drive up the Bismarck Archipelago during the early part of the war. Distance dictated that very little strategic bombing could be accomplished until bases could be obtained within range of the Japanese home islands. Truly strategic targets were scarce in most of the Pacific islands and the majority of the aerial bombing done in the first three years of the war was more tactical in nature. The advent of the B-29 with its expanded range changed all that.

On the drawing boards since 1939, the very long-range bomber, later designated the B-29, was counted upon to provide the range necessary to reach the Japanese where they were most vulnerable--in their four home islands. Plagued by mechanical troubles from the beginning, the Air Forces elected to work out the development "bugs" while in combat--a situation unique at that time, that proved both time-saving in development and costly in accidents.[9] The new plane was first used in China when on 15 June 1944 fifty planes flew from bases far inland to attack the iron and steel works at Yawata, Japan. The Twentieth Air Force, operating under almost impossible logistic odds, was able to mount several raids on the Japanese islands, but every bit of the gas, oil, bombs and food had to be flown over the Himalaya mountains. In no way the fault of the hard-working and dedicated crews, this logistic

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[9] Interview, Major General Haywood S. Hansell, (USAF Retired) 5 June 1969; Craven and Cate V, Chapters III through VI; and General Curtis E. LeMay, Mission With LeMay (New York: Doubleday, 1965), pp. 321-90.

obstacle eventually defeated the China-based B-29s. By the time this had occurred, the Marianas Islands of Saipan, Tinian and Guam were in American hands.

Taken by United States forces primarily for their strategic location within B-29 range of the Japanese home islands, the Marianas had runways and not much more when the first planes landed on 12 October 1944. The new plane had an average range of 3,250 miles and was designed to operate at altitudes of 30,000 feet. Originally planned for use in Europe, it became operational too late and was earmarked for the Pacific war instead. With the fall of the Marianas to the Americans and the B-29's arrival in the Pacific the Japanese home islands were at last within reach. Yet there were not many at this point who actually felt it possible to defeat Japan from the air. Reeling as she might be from successive island defeats and increasing naval losses, Japan still had her industry intact, and a good portion of her army and a fair share of her navy plus the remainder of her air force were ready to defend the islands with the same tenacity they had shown earlier on Guadalcanal, Tarawa and Saipan. In the JCS plan was an invasion of Honshu island to take place in November 1945. Meanwhile, the Army Air Forces were to conduct the same kind of strategic bombing campaign as the one which had proven so effective in Europe. The range was greater, the targets not so dispersed and the industrial capacity somewhat less than that of Germany, but the basic mission at this time

was strategic bombardment. It was to be primarily an AAF show, and in late 1944, despite the immediate hardships involved, they were anxious to be about it.

The Marianas were still a long way from the Japanese heartland--1,200 miles from Tokyo. The planes of the 21st Bomber Command were still arriving on Saipan from the United States when the first mission took off for Japan on 24 November 1944. Brigadier General Haywood S. Hansell, Jr., commander of the 21st and famous for his astute planning, co-authorship of AWPD-1 and as a devout disciple of daylight, precision bombardment, conducted his raids in the best tradition of the old school dogma. The planes flew in close formation, at high altitudes and in daylight. The results, due to inexperienced crews, foul weather conditions that generally existed along the route, and unusually high winds over the targets, were disappointing from the beginning. The target for the first November raid was an aircraft plant some ten miles northwest of the Emperor's Palace in Tokyo. Based upon USSBS recommendations made in Washington, the JTG had selected aircraft plants to head the target list. One hundred and eleven bombers, loaded beyond authorized capacity, struggled into the air for the 12-to-14-hour round-trip raid. Flying at altitudes of 27,000 to 33,000 feet the planes hit the plant with only 48 bombs doing minor damage and killing 57 people. Two B-29s were lost and the return landing was a triumph of crew ability over adversity. With only smudge pots to

light the single landing strip, the possibility of a disaster was constantly present. With the limited supply of gas remaining in all B-29s by the time they reached Saipan, one plane, crash-landing so as to block the runway, would have forced the entire command to ditch at sea. Fortunately, such a situation did not develop. The beginning had been anything but auspicious; training was needed, training took time and time was not an available commodity in late 1944. Doubt was being expressed by Air Force leaders in Washington that the B-29 could operate out of the Marianas at all, a doubt which even General Arnold seemed to share to some extent. Yet, operate they did, slowly at first, but with rapidly increasing effectiveness.[10]

Despite the increasing degree of competency, the bombing results of the B-29s left too much to be desired. Flying at the high altitudes specified in the bombing doctrine, the planes ran into severe frontal conditions en route, cloudy conditions over the targets which prevented visual bombing, and, worst of all, tremendous winds encountered over Japan at altitudes. Reaching velocities of over 200 knots, the wind played havoc with both navigators and bombardiers in the B-29s. Pushed by such vicious winds, the planes often exceeded the speed or drift calculation limitations of the bombsights. A target missed on the initial pass by poor navigation often proved unreachable

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[10] Hansell, "The First of the Twenty-First," Air University Review, XVIII, No. 4, (May-June 1967), p. 2-17; interview Hansell, 5 June 1969; Craven and Cate, V, 546-561.

if it meant flying into such a headwind. With the radar bombing sets none too reliable, the visual bombing results simply did not measure up to the efforts being expended. In January 1945, General Arnold brought Hansell back to Washington and replaced him with Major General Curtis E. LeMay. A veteran of the Twentieth Bomber Command operations in China, LeMay continued to operate with the high-level bombardment doctrine for a short while, but with the increasing pressure from Washington to attempt what had heretofore not been widely considered, the aerial defeat of Japan, he instituted a radical change of tactics.

The accepted doctrine of high-altitude daylight bombing, for which the B-29 had been specifically designed, having proven to be at best unsatisfactory, the problem of an alternative faced the new commander. General Hansell had blamed, with considerable justification, the multitude of operational problems for the early failure of the raids. General LeMay looked to his tactics as well, and therein lay the turning point of the air war--and, not incidentally, probably the making of a future Chief of Staff of the Air Force. It was well known in the United States that Japanese cities, built flimsily of wood, bamboo and plaster, were vulnerable to fire raids. Earlier, the problem had been simply reaching the target with any firepower. Now that this problem had been solved with the B-29 and Marianas bases, the specter of dogma had prevented exploitation. With the lack of initial success, discussion

favoring incendiary bomb attacks increased. So much did it grow that General Arnold, in February 1945, moved fire raids against Japanese cities to second spot on the target lists for the Twenty-First Bomber Command. There was a psychological reason too. The Philippines were in the final stages of capture and Iwo Jima was to fall soon. To bring these losses home to the Japanese people before the invasion of Okinawa, required more than just pinpoint bombing of industrial targets.

A trial fire raid on Tokyo on 25 February produced "encouraging" results. As pressure built up on LeMay to provide diversion for the Okinawa campaign during the pre-invasion period of 9-22 March 1945, he and his staff decided to take a calculated risk. All B-29s were stripped of armament and ammunition allowing an increase of 3200 pounds of bombs. To avoid fighter attack in such a condition a nighttime raid was decided upon. This would hinder precision bombing, but the idea of a fire raid precluded the necessity for precision. It was area bombing only slightly better defined, thanks to the technological improvements in radar bombing. What the Americans had so roundly scoffed at when their British counterparts had adopted it, was about to become the new tactic of the air war in the Pacific. There were other advantages as well. The weather, almost always bad over the targets, was usually somewhat better at night. In a final gesture of seeming defiance at the prewar aerial dogma, LeMay ordered his bombers to descend to altitudes of from 5000 to 10,000 feet for their bombing runs.

This made the high-altitude designed planes more vulnerable to flak, but LeMay counted on the cover of night, the lack of sophistication of Japanese radar/anti-aircraft and the scarcity of Japanese night fighters. Without the danger of fighters there was no need for the bombers to fly in formation, a tactic designed for mutual protection. Besides, formation flying at night increased dramatically the danger of mid-air collision. Accordingly, the bombers flew a loose trail formation. It was, as stated, a calculated gamble.[11]

The first raid conducted using the new tactics kicked off the pre-invasion diversions the Navy had asked for. On the night of 9-10 March 1945, 334 B-29s took off from bases on the three islands of the Marianas and headed for Tokyo. The target was an area four miles by three miles adjoining the heart of the industrial section of the city, and containing within it many "home industries" which fed small parts to the larger assembly plants. At altitudes of from 4900 to 9200 feet, the bombers dropped some 2000 tons of incendiary bombs. The "bombs away" message received by LeMay at 21st headquarters said simply, "Bombing the target visually. Large fires observed. Flak moderate. Fighter opposition nil."[12] Tail gunners on the trip home observed a glow in the sky over Tokyo for 150 miles.

The damage of this greatest of all fire raids was appalling.

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[11] Craven and Cate, V, pp. 567-576; MacIsaac, pp. 158-59.

[12] As quoted in Craven and Cate, V, p. 615.

One quarter of all the buildings in Tokyo were destroyed. Over a million people were homeless, 83,793 were dead and another 40,000 wounded. Most startling of all, 15.8 square miles of the city had been burned out. No other air attack in World War II, including the two atomic attacks, was as destructive as this one. LeMay had been vindicated for his gamble, and the prewar air tactics of the United States were in a shambles. Only fourteen B-29s were lost, less than the loss rate in January 1945 but higher than it would be a month hence. Nor did LeMay let his crews rest on their laurels. Next came indifferent results in the bombing of Nagoya (due to no ground wind to fan the flames and too wide a bomb spacing), followed by great successes over Osaka and Kobe. What had been only speculation before--that aerial attack could force Japan to surrender without invasion--now seemed much closer to reality. Tactically speaking, the switch which LeMay had directed, was so tremendously successful that the methods of strategic bombing, so carefully worked out over Germany, underwent a radical change. But it was only the tactics, not the concept of strategic bombing that changed. The targets in Europe versus those in Japan made direct comparison inaccurate. Instead of specific targets, the new directives from the JTG now listed simply cities and divided them into several areas instead of industrial plants, a situation which both complicated and simplified the work of the USSBS teams later on.[13]

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[13] Craven and Cate, V, pp. 608-626; LeMay, pp. 328-372.

For the remainder of March and through April, May and June, the B-29s continued their fire raids, interspersed with more conventional daylight, high-altitude precision raids. By 15 June the successes were so marked, and the cost in planes and crews so relatively low (certainly much below the costs of the European campaign) that optimism was rampant. The B-29s were diverted during this period to tactical support of the invasion of Okinawa and to an increasingly active program of aerial mining of the waters around the Japanese home islands. Japanese morale began to decline sharply, especially in the larger cities where the fire-bombing had been concentrated.[14] The pattern had been set and for the Japanese it was now only a matter of time. MacArthur had scheduled the invasion of the Japanese island of Kyushu (code name OLYMPIC) on 1 November and a similar action on Honshu for 1 March 1946 (code name CORONET). With the fall of Okinawa P-47 fighters were within range of Kyushu island and began to take full advantage of the fact, with night fighters keeping up the pressure after dark. In addition, B-24s began working over the Japanese islands, complementing the raids of the B-29s. Deployment of the Eighth Air Force under General Doolittle from England to Okinawa was underway when, on

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[14] This was especially true in Tokyo where two additional fire raids, on 23 and 25 May 1945 burned out additional sections of the city --the latter consuming 16.8 square miles, the largest area consumed in a single raid although the raid of 9 March did almost as much (15.8 square miles) with much less bomb tonnage and much higher casualty rates. Craven and Cate, V, pp. 638-39.

6 August 1945, the first of the world's atomic bombs was dropped on Hiroshima. The second bomb, three days later, hit the city of Nagasaki. Events moved swiftly thereafter; diplomacy that never seemed to get underway suddenly produced an end to the Second World War. The two atomic bombs triggered the first surrender of a sovereign nation to air power in the world's history. No slight whatever is intended of the efforts of the submarine blockade of Japan, of the efforts of the Navy and Marine units throughout the Pacific war, each of which contributed another dent in the armor of Japan's perimeter defense. Nor is there an attempt to say that the Army Air Forces, and namely the 21st Bomber Command, won the war--they were, however, the instrument which forced the final surrender and which first brought home to the Japanese the futility of further resistance. As such the contribution of air power to the defeat of Japan was unusual in its significance--far more so than in Europe. It became the task of the Pacific USSBS to determine just how much credit the Air Forces deserved and the effect of strategic bombing upon Japan. Certainly the direct application of air power to the Japanese home islands was a major turning point in the Pacific war.

The similarity in the staffs of the European and Pacific Surveys was about all the duplication that could be found. Life, culture, technology, construction and topography in Germany differed considerably from that of Japan. Bombing doctrines that eventually worked in

Germany, once aerial superiority was obtained, simply would not do the job in Japan. Evaluation of the bombing results, by the same token, was also different. In the first place the Pacific USSBS had a smaller and more compact job to accomplish. In terms of tonnage of bombs dropped, the Pacific war seemed much less intense than it actually was at the location of the fighting. Over Europe the Allied air forces dropped 2,700,000 tons of bombs while in the Pacific, with its paucity of strategic bombing targets only 656,400 tons fell. Of this latter figure, only 161,377 tons actually fell on the Japanese home islands--a situation more attributable to geography than to the inability of Allied forces. Of the tonnage dropped on Japan proper, only 22 percent was directed at specific industrial targets--raids that could qualify for the term "precision."[15]

While the parameters of the Survey's work in the Pacific differed from those in Europe, the basic organization, and the personnel manning it, was familiar. There was the usual decentralization into regional headquarters located at the larger cities around Japan, and the well-organized and experienced teams found less chaotic conditions existing in local governments and in the industries spared the debacle of the fire bombing. It was a case of the records of a firm either being completely available or the entire firm, records and all, being nothing

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[15] USSBS Pacific Report #15, Aircraft Division, The Japanese Aircraft Industry, May 1947, p. 109. This report contains the best source of statistical tables.

but ashes and twisted steel. It was not necessary to advance behind the infantry as it had been in Europe, but it was essential to interview the Japanese to obtain the information that records would normally provide. Those Japanese individuals singled out for interrogation submitted with a deference that made the work much easier. Americans were to all extent and purposes the only occupying power, which ruled out any competition or interference for the Survey. Experience had been a great teacher and, as the official historian summed up the Pacific Survey, "On the whole the operations of the Survey in the Pacific Theater, in spite of the broadened directive, ran much more smoothly than they did in Europe."[16]

The cooperation in the gathering of data between the Army, the Navy, and the Army Air Forces was quite good. Admiral Nimitz had appointed Rear Admiral Ralph A. Ofstie as the senior Navy man under General Anderson. Ofstie was a Naval Academy graduate who had served briefly as an attache in Tokyo before the war and had spent almost the entire war on one aircraft carrier or another. An outspoken advocate of naval air, he had seen his concepts vindicated in the island-hopping campaign in the Central Pacific. Since President Truman's letter opened an investigation of naval air as well as strategic bombing, Ofstie's job was to supervise such and presumably to see that nothing derogatory was said about the role, or conduct of the role, of naval

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[16] Beveridge, III, p. 250.

air. It was precisely this factor that caused Ofstie and Anderson to clash bitterly before the final reports of the Survey were completed.

Heading up the Navy and Navy Air Forces division of the Military Studies Branch, Admiral Ofstie was the senior naval person on the Survey staff. He was charged with assessing the role of air power in the Pacific, but, in the absence of any other naval investigating body, and a more limiting directive, broadened his coverage to include as much of the Navy's activities as his staff could possibly handle. As a result, nine reports were written covering naval bombardment, mining operations, island studies and, more importantly, Marine and Navy air support studies. It was the Overall Report and the Campaigns of the Pacific War that caused such objection from General Anderson.

All reports from the various Divisions and Sections of the Survey had to pass through the offices of the "Big Four," they being General Anderson, Admiral Ofstie, Mr. Nitze, and General Gardner.[17] Objections from any of these gentlemen, usually along the semantic line, sent the report back for additional justification or rewrite. It was this administrative arrangement that held up both the Air Forces and the Navy reports while lengthy discussions ensued over the wording and interpretation of the degree of contribution of the two services to the winning of the war.

On 12 October 1945, Anderson left Washington in his B-17

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[17] Ibid., p. 114, 221.

bound for Tokyo. The plane had been assigned to the General in England and the crew, in whom he placed complete faith and with whom he formed close friendships, stayed with it for the next year.[18] Anderson took with him his Chief of Staff on the European Survey, Colonel Ramsey D. Potts and his new Deputy Chief for Tokyo headquarters, Colonel Robert H. Terrill.[19] His WAC Executive Officer, Captain Mary Tressler, who also acted as his aide-de-camp, joined the group in Tokyo. The plane traveled to Tokyo via England, Cairo, Karachi, Calcutta, Chungking and Shanghai. When the General returned to Washington in December, he flew the Pacific route, thus completing a trip around the world--a trip he had begun in May of 1943 which had terminated in London.

Anderson organized his personnel into three sections: Chronological History of the AAF, Japanese Army and Navy Air Force, and Japanese Ground Logistics. The first branch he directed and supervised personally, the second was headed by Colonel Potts, and the third by Colonel J. F. Rodenhauser. Anderson, Potts, and Terrill sat in on all staff conferences of D'Olier and his Division chiefs offering

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[18] Major Howard L. McClatchy was the pilot, Captain Raymond E. Brooks, navigator, with Lieutenant E. F. Sweeny, Master Sergeant A. A. Pencek and Technical Sergeant A. B. Anderson (no relation) as crew members. File, "TDY Orders," (AGPO-A 200.4, 12 October 1945), Archives 168.7006-29.

[19] Colonel Terrill rose to the rank of Lieutenant General and was Vice Commander of Air Defense Command at his retirement in 1964. Colonel Terrill later joined Anderson on the faculty of the Air War College.

advice and performing vital liaison functions with General MacArthur's staff. The Survey historian called his work "invaluable" in this respect and so important was it considered that General MacArthur assigned a small group headed by a Major General from his headquarters to more effectively carry out the many liaison problems involved and to funnel USSBS information into MacArthur's occupation headquarters.[20] Any interrogations of Japanese military leaders found Anderson, or one of his two senior deputies in attendance. In addition, they personally interviewed, through interpreters, the leaders of the Japanese air forces, including Field Marshal Hata, Premier Baron Suzuki, Lieutenant Generals Arisue, Kan Shimuju, Sugawara, Watanabe, and Generals Abe and Endo.[21]

Nor did Anderson spend all his time in Tokyo. The opportunity afforded by his position allowed him to leave the Japanese home islands, within which he traveled to the various regional offices with great frequency, and inspect the important islands and combat locations throughout the Pacific. Knowledge of these areas was to serve him well when he became embroiled in his arguments with Admiral Ofstie later on.

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[20] Beveridge, III, p. 96.

[21] Anderson gathered large quantities of samurai swords and Japanese army sabres during his travels as all such weapons were directed to be confiscated from the Japanese. These he turned over to the Survey's administrative staff for distribution. Beveridge, III, p. 23. This action must have made Anderson very popular for such souveniers in 1946 were selling for over $100.00.

On 6 November 1945, Anderson and Terrill set out in the B-17 for a week's trip to Shanghai, Manila and Okinawa, overflying en route Leyte, Morotai, Biak, Rabaul, Bougainville, Munda, Truk and Iwo Jima. They were hardly back in Tokyo from that trip before Anderson left on another, this time escorting D'Olier, Nitze, and Kenneth Galbraith. Admiral Ofstie had been scheduled to go, but declined at the last minute. Three Survey members, Colonel Potts, Navy Commander Richard Reeve and Lieutenant Commander Walter Wilds went along as well. On this trip the party covered Shanghai, Manila, Hollandia, Manus Island, Guadalcanal, Rabaul, Truk and Guam. The trip lasted through the 25th of November.[22]

From 24 October 1945 to 4 December when they departed for the United States, either D'Olier or Nitze or both held daily staff meetings. The target data for completion of the data-gathering phase had been set earlier at 3 December. This left only some six or seven weeks to finish the research for the entire Pacific Survey. Between 5 December and the week before Christmas, most of the Survey personnel returned to the United States, some for discharge and others for a well-earned leave prior to reporting to Gravelly Point in Washington to finish the writing. There had been some 1100 personnel involved in the Survey at its peak in mid-November, but by 1 April 1945 the Tokyo office was closed. Writing had begun just as soon as enough data was collected,

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[22] File, "TDY Orders," (AG 210.453, 12 November 1945), Archives 168.7006-29. The trip covered 9461 miles. Beveridge, III, p. 21.

but the majority of it waited until the personnel gathered in Washington on 7 January 1946. There the reports were prepared and passed upon by the "Big Four." It was at this critical juncture that the semantic squabble between the AAF and the Navy over their respective contributions to the war in the Pacific burst into a full-blown feud between Anderson and Ofstie. The most recent USSBS historian has chosen, quite aptly, to call it the "Anderson-Navy War."[23]

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[23] MacIsaac, pp. 182-201.

CHAPTER IX

THE ANDERSON-NAVY FIGHT[1]

Long before the start of World War II, the flying branch of the U.S. Army had dreamed of the autonomy which had been granted to their sister service in England, the RAF. To be sure there was quarreling within the RAF between the bomber advocates and their fighter counterparts, but it was at least a dispute among equals. Such was nearly the case in the Army Air Forces of World War II for an Executive Order of the President in 1941 gave them practically autonomous status. They were still subject to the whims and regulations of the Army, just as the carrier and Marine air units were under the control of the Navy. Yet, the near-autonomy fitted well and the AAF enjoyed the wearing--so much so that they were ready to push for complete separation after the war. This was not a new attitude, for well before the advent of the war, in the early days of Billy Mitchell in fact, moves had been made to create

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[1] For the research and analysis that forms the basis for the following section on the little-known, but highly indicative "war," the author is indebted to Major MacIsaac's dissertation, already referenced, especially pp. 182-201.

a separate air force modeled after that of Britain. To these moves then, as after World War II, the Navy was a chief objector. Possibly the Navy would not have objected to simple autonomy, but they were violently aroused when separation threatened to encroach upon their traditional missions, erode their Congressional appropriations, and imply either directly or indirectly that the airplane was superior to ocean-going ships. The awesome destruction wrought upon surface ships by airplanes altered the Navy thinking in this respect by the end of World War II. They not only accepted the airplane, but used it to excellent advantage. There was nothing they could, or cared to, say in opposition to the USSBS (Europe) report that air power was significant and that the war would have been more difficult to win without it.

Now that the Survey was looking at the Pacific theater, and at all phases of it, with a view to assessing air power, it was not unreasonable for the Navy to be very interested, not just in their air arm's performance, but from the standpoint of surface forces as well. There was a movement abroad in Washington to unify all three services--a situation in which, as the Naval leaders seemed to view it at the time, the Navy stood only to lose. With these facts of life staring the Navy in the face, it is no wonder that Admiral Ofstie was prepared to do anything in his power to make sure the Survey gave full credit to the Navy for what was thought to have been the Navy's war in the Pacific. There was resentment toward the AAF which seemingly came in at the very

last of things, dropped a minimal tonnage of bombs compared to its European efforts, and yet forced Japan to surrender without the long-planned-for invasion of their home islands. In the eyes of the Navy, who had fought long and valiantly, it just did not seem right for the Survey to possibly try to say again that air power, and by that they meant the USAAF, had been so successful. Leaving rivalry aside, there are many points in the Navy's favor, but the argument is not lopsided in their favor.

There was another difficulty too. Should such a conclusion, that air power had been successful in the Pacific, ultimately be made, there was then the problem of justifying the Navy mission, and thereby its budget, to Congress--and a post-war, economy-minded Congress at that! It was this thought along with many sincere beliefs that unification as a concept was wrong, that put the Navy in opposition to the AAF in the latter's fight for autonomy. Even at this early date it seemed clear enough to the Navy what the real purpose of the Survey was; surely the instigators of USSBS planned to use its findings as ammunition in the fight for equality either by unification or autonomy. Nothing could be done to stop the European Survey report, but, whenever it became necessary, Ofstie could do something as a member of the "Big Four" to stop any reports that might be used to somehow interfere with the Navy mission or fail to reflect credit upon the Navy's fine work in the Pacific.

It is impossible to prove with conclusion, but it seems to be a reasonable assumption that Generals Arnold, Fairchild, Kuter and others had the coming battle for autonomy in mind when they opted for the Survey in the beginning. All had not gone according to plan in the war, but not all had gone wrong either. If not at the beginning, it was not long before Air Force leaders apparently saw in the Survey the justification for their own fight to keep recognition and gain independence. The European report seemed to have suited them well, and Anderson's editorial hand was on almost every page. Now, as Senior Military Advisor to the Pacific Survey, he planned to do the same thing, not with an axe to grind against the Navy, but confident in the fact that the Air Forces had contributed significantly to winning of the Pacific War and anxious to document that pre-determined conclusion. He was willing to give the Navy their just credit, but he wanted to be sure that General Kenney's Far East Air Forces also got theirs. Initially, there was cooperation and friendship between Anderson and Ofstie. As the writing progressed and the widened scope of the Survey which President Truman had authorized became more cumbersome and detailed, it was more and more difficult to get an agreement on a report from all of the "Big Four." With their respective staffs writing and revising drafts to counter arguments and seeming innuendos by the other side in their respective reports, it did indeed become an "Anderson-Navy" war.

General David A. Burchinal, USAF, then a Colonel, was a

member of Anderson's Pacific Survey team.[2] Present during the entire period from September through December 1945, Burchinal remembers the feud as not as intense as Major MacIsaac has stated it to be in his USSBS history. When asked if he considered the arguments between Anderson and Ofstie to be a "war," he stated, "Not entirely, Ofstie and his subordinates were committed to a Navy line regardless of what the facts showed. O. A. was annoyed and impatient with people not susceptible to reason."[3]

Lest it be thought a purely personal scrap, there is no record that General Anderson at any time failed to have the full backing of his Air Force superiors in Washington. General Burchinal recalls that the feud lasted "only for the duration of USSBS," but he feels that Anderson did not care much for Admiral Ofstie thereafter. Ofstie was invited to speak at the Air War College which Anderson headed so the feud could not have been too personal. Air Forces personnel in Washington backed Anderson by virtue of noninterference in USSBS work. Nor did the feud impair the work of the Survey other than to slow up agreement on the final writings. Actually, it made it pretty lively at times and possibly sharpened the end product.[4]

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[2] General Burchinal is now the Deputy Commander in Chief, United States European Command, a position he assumed in 1966.

[3] Letter, General Burchinal to author, 19 March 1970. "O.A." was the nickname given to Anderson by most of those who worked under him.

[4] Ibid.

Anderson had one other very convincing argument on his side --the atomic bomb! This awesome new weapon, coupled with the long-range bomber, represented a threat to the old concept of ample time to mobilize and arm in case of hostilities. Already scientists and military men were predicting that the next war would be over in a matter of hours, and that the winner would be the nation most prepared to fight at a minute's notice. For Anderson, this knowledge was icing on the cake to his air power thesis; to the Survey members it was of abiding importance as they walked among the ashes of Hiroshima and Nagasaki; to the Navy it was a nightmare, for they, at the moment, had no means of delivering that bomb. The increasingly enigmatic Russians did nothing to ease concern. They presented an all too valid reason for a large, standing armed force, and the specter of World War III was not as remote as everyone had hoped it would be so close after the end of the second global conflict.

Ofstie, on the other hand, wanted to emphasize the Navy's role in making it possible for the AAF to get close enough to bomb the Japanese home islands. In a communication sent to all members of the Naval Analysis Division, Ofstie explained the primary task of the Survey, and the President's charge that they evaluate all forms of air attack. He elaborated:

> The assigned mission, however, requires a parallel and equally thorough study of all prior operations which brought us within striking range of the Japanese homeland, and without which there would have been no successful conclusion of

> the war. . . . The result of the Survey's effort . . . may well be the basis for the major decisions respecting our post-war national security. This may include the form of our military-naval organization the relative "weight" of our respective armed forces--ground, sea, and air--and the means of integrating all forces to the end of national preparedness. This imposes a grave responsibility on all personnel selected for the job. It will require of every man his utmost initiative, skill, and effort.[5]

Anderson objected to the Navy's broad approach, but the Navy reasoning was difficult to fight. It could be argued that Naval air elements were involved in every major Pacific operation, including the bombing of the Japanese home islands. Because of the President's wide-ranging commission all these operations had to be studied, for to look at AAF air attack alone would only result in a mistaken concept of the entire situation. Finally, the Navy legitimately wanted additional information for its own use--a logical side effect of their efforts but hardly one to cause great concern to the Survey personnel. General Anderson was told, in effect, that since the AAF intended to tell their story, the Navy fully intended to tell its version as well. With the line of dispute so clearly and irrevocably drawn it had to be Mr. D'Olier's final decision as to what was to be printed and what was not.

Both the Naval Division and the Military Analysis Division had agreed early in the proceedings to submit copies of their reports to each other before they went to the Chairman. Admiral Ofstie's comments on

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[5] Memorandum, Ofstie to personnel of Naval Analysis Division, 16 September 1945, as quoted in MacIsaac, p. 188.

the Military Analysis Report, The Fifth Air Force in the War Against Japan contained such phrases as "Criticism not based on fact." "Is this an objective report on the 5th Air Force or primarily a medium of propaganda?" "Continuing propaganda," and "Not factual." "Childish." "Utter nonsense." These phrases accompanying a returned manuscript were not calculated to win friends for the Navy cause among the writers on General Anderson's staff--nor did they. As might be expected, when the time came for the Navy to submit a manuscript to Anderson's section it was reviewed with the proverbial "fine-toothed comb." Below are some Air Forces excerpts from the multitude of comments attached to various Navy reports:

> The Philippines Campaign
> Comment No. 7. Recommend the deletion of this entire sentence. It is neither correct nor realistic. The primary reason for beach fighting on some of the smaller islands, such as Tarawa, Iwo, etc., stemmed from two fundamental reasons: (1) inadequate preparatory bombardment on a sustained scale; (2) lack of depth in terrain.
> Comment No. 9. This entire paragraph leads to both faulty and dangerous conclusions in terms of future military organization and structure. It is recommended the paragraph be rewritten in a sense which shows a realistic application of the relative combat capabilities of opposing forces at this time. . . .
> Comment No. 12. Recommend the deletion of the paragraph. It is neither realistic nor factual. It makes no material contribution to the paper.
> Comment No. 32. Following "repeated air strikes" add, ". . . by FEAF and the fast carriers of the Third Fleet. . ." Both these forces operated in this area and the text should so state.[6]

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[6] Excerpts are from a seven page typewritten manuscript, "Comments on Naval Analysis Division Study, 'The Philippines

Anderson paid painstaking attention to every detail of these criticism papers and often wrote the sometimes biting critiques himself. While he may have lacked a great deal of formal education, he was quite able to hold his own in the battle of words with Admiral Ofstie and his section. He issued no specific instructions in critiquing Navy papers but left no doubt in the minds of his staff that they were to base such actions upon the soundest analysis possible in view of the facts available.[7] In his personally-prepared critique of the Navy's report on the "Solomons Campaign," he stated:

> (3) This does not present a true picture of the support given by SWPA Forces. The planned amphibious assault at Guadalcanal was postponed one week from 1 August to 7 August allowing a more complete interdiction of airdromes at Rabaul which were heavily loaded with aircraft at that time. The job done by the 5th [Air Force under General Kenney] earned a "well done" from Admiral Ghormley.
> (12) It appears that one object of these reports is an attempt to show that B-17s are no good. Whenever B-17s attack anything and miss they are pointed out as B-17s. Marine and Naval Planes generally are listed by type. . . . When the B-17s do hit something it is carefully pointed out that it is an "old DD" or "dead in the water" and the impression is left with the reader of the magnitude of the failure of the B-17.[8]

Campaign'" by Military Analysis Division. File, "Miscellaneous Folder on USSBS," Archives 168.7006-64.

[7] Letter, Burchinal, 19 March 1970.

[8] Excerpts taken from a typewritten manuscript, "Comments on Naval Analysis Division Study--Solomons Campaign," and bearing Anderson's signature block. Since the copy is a carbon the presumption can rather safely be made that Anderson did sign the original. Archives 168.7006-64.

By the time Anderson and Ofstie, and their respective staffs had gathered again in Washington in January 1946, there was no love to be found between them. When the Chairman issued his Summary Report (Pacific War) Anderson found himself in considerable disagreement with the conclusions.[9] He felt it was "superficial in its treatment." He went on to say, "Their justification, of course, was that it was not their task to ascribe military values or significance of specific items or opinions." He continued, "I think they (the Survey Directors) spent far too much time hiding behind that screen. However, it was the best we could do with the personalities and prejudices involved."[10]

While he was in Washington, Anderson could fairly effectively prevent the Naval Affairs Division from printing anything derogatory about the AAF. In fact, when the Navy, at Ofstie's direction submitted repeated drafts of their report, The Campaigns of the Pacific War[11] and spoke in glowing terms of the carrier effort throughout the war, Anderson refused to initial his approval. The Navy rewrote and retitled, but to no avail. Ofstie, angered by Anderson's refusal to clear, called a meeting of Anderson, D'Olier and Nitze expecting to break the impasse. Instead, Nitze and D'Olier sided with Anderson and refused to allow the

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[9] USSBS, Summary Report (Pacific War) (Washington: GPO, 1946).

[10] Letter, Anderson to Mr. P. G. Bower, 19 March 1947, file, "Personal Correspondence," Archives 168.7006-1.

[11] USSBS, Pacific, Item No. 73, The Campaigns of the Pacific War (Washington: GPO, 1946).

Navy to publish the report under the auspices of USSBS. By then it was necessary for both protagonists to report to their new assignments; Anderson to the new Air War College at Maxwell Air Force Base and Ofstie to participate in Operation CROSSROADS, the atomic test explosion at Bikini atoll. Before leaving Washington, however, Ofstie instructed his staff to rewrite the report once more. They did, and upon Ofstie's return to the capital he once again sought Military Analysis approval. General Anderson had turned his duties over to a Colonel Benjamin G. Cain. It was Cain who apparently gave final approval to the report, for in a letter to Anderson he wrote:

> My Dear General Anderson:
>
> Thursday I met with Wild and Admiral Ofstie on the last two insidious, so-called Campaign Studies. . . .
>
> To say I am happy about the business would not be fact, but I do feel that the papers are now in such shape that they can do us no harm. They are outstanding examples of contradictory unmilitary papers but the teeth have been pulled (IF THEY ARE PUBLISHED AS CORRECTED).[12]

Armed with this acceptance, Ofstie pushed through the publication of his Campaigns. It contained no reference of the B-29 bombing efforts against Japan. Now it was Anderson's turn to go to the Chairman, and he wasted no time.

The Military Analysis Division had been hard at work on their

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[12] Letter, Cain to Anderson, 25 August 1946, file, "Personal Correspondence," Archives 168.7006-1.

over-all report titled Air Campaigns of the Pacific War.[13] In the same manner, and for generally the same reasons, Ofstie had refused to initial for clearance the Anderson report. It had remained dormant until the Navy's report reached print with the USSBS cover on it. It appeared that despite D'Olier's refusal to allow it to be printed, and Nitze's specific instructions to that effect to the Undersecretary of the Navy in March of 1946, the Navy had proceeded. The USSBS cover on the report seemed to grant that organization's approval which was not actually so. Anderson apparently felt betrayed and was now prepared to insist that the Military Analysis Report also be published; if for no other reason than to counter the Navy view and set the record straight. On 26 November 1946 Anderson submitted his section's report to Nitze for publication, without, obviously, Ofstie's approval. Mr. Nitze, tired of the interservice wrangling, blew up, and in a December memorandum recommended the report not be published since he had previously told both sides that neither could publish with the approval of USSBS. He conveniently ignored the fact that the Navy had published an apparently accepted USSBS report, approved by him or not.

The published Navy report was much too real a fact for Anderson to ignore, however, and he pushed on despite Nitze's refusal. By now everyone was somewhat confused, and D'Olier ordered Nitze and

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[13] USSBS, Pacific, Item No. 71a, Air Campaigns of the Pacific War (Washington: GPO, 1947).

Anderson to meet to resolve the differences. The meeting took place in February 1947 and Nitze sent the Anderson report to Ofstie for his comments--an action, it would appear, so naive as to be downright silly at this point.

Quite naturally, Ofstie presented strong exception. There were two points with which he differed most violently with Anderson. The first was the declaration that air power (and this general term was used--not AAF power):

> . . . was the dominant combat force of the war against Japan and was decisive in that--
> Air power dominated its own element.
> Air power dominated naval warfare.
> Air power dominated ground warfare.
> Air power possessed powerful and independent logistical capabilities.
> Air power established effective area interdiction by occupation of the air space over an objective area.
> Air power was capable of forcing the capitulation of an enemy without surface invasion.

And in another place:

> If our nation is to survive in this atomic age, logic demands that our national defense agencies be oriented toward air power, and further, that the future development of air power not be restricted, as in pre-World War II years, by the inertia of established organizations or personalities.[14]

This conclusion bothered Ofstie for it appeared to belittle the Navy's work in the Pacific, but he had a second major objection almost as serious. It is of special significance to this story in light of events to come in Anderson's career. The Air Campaigns Report contained

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[14] Air Campaigns of the Pacific War, p. 69.

the following justification for a possible "preventive war:"

> We must appreciate. . . that it is still defensive action, and not aggression, if we intercept and destroy an enemy force en route to our Nation, bent upon our destruction. Still further, we must recognize that an overt act of war has been committed by an enemy when that enemy builds a military force intended for our destruction, and that the destruction of that force before it can be launched or employed is defensive action and not aggression.[15]

Admiral Ofstie submitted a detailed analysis of his objections which he then summarized in a latter to Nitze. Some quotes from it will indicate the general tone of the entire summary:

> . . . I find "Air Campaigns" to be in major part a vicious and deliberate attempt to discredit the entire Naval service.
>
> In the circumstances, Mr. Nitze, I would consider the publication of the proposed volume to be directly contrary to the principles under which the Survey operated and decidedly inimicable to the best interests of the armed services and the government, either at this or any future time. . . .
>
> I cannot believe that the Directors would willingly associate their names with a paper so completely lacking in character and honesty of purpose.

From the "detailed analysis" a few excerpts:

> The volume presents a completely inaccurate and entirely biased account of our war against Japan which is of absolutely no historical value, consistently misrepresents facts, and indeed, often ignores facts and employs falsehood.

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[15] Ibid., pp. 68-69. The reason given for General Anderson's relief from command of the Air War College in 1950 was his supposed advocacy of "preventive war." We can assume Anderson approved this statement of pre-emptive war at this time when the Russian menace was very much on most military leader's minds. See the succeeding chapter for a discussion of this point.

> Underlying the main theme that air power (sic) alone won the war is a vicious and deliberate attempt to discredit the naval service. No opportunity is lost to belittle the efforts of the Navy, to charge the Navy with incompetence and to ridicule the Navy concept of warfare. . . .

Ofstie went on in this similar vein at considerable length. His final statement concluded with the words, ". . . since it completely misrepresents the historical facts of the Pacific war, it could cause great harm to future military thinking and thus to our national security."[16] There could be no mistaking the violent disagreement of Admiral Ofstie with the Air Campaigns report as submitted to him. The matter was once again at an impasse.

Anderson was not to be denied, and the matter was brought to the attention of the Chairman, this time by the General. For D'Olier it was a matter to be ended as rapidly as possible, and out of which it was now impossible to extract himself with any sense of fairness without agreeing to the publishing of Anderson's report. This he did in a note signed by him saying, in part:

> As a result of conferences with Major General Lauris Norstad (Chief of Plans, AAF) and Major General Orvil A. Anderson, it has been agreed that the report entitled "Air Campaigns of the Pacific War" should be printed in the clear as an official report of the United States Strategic Bombing Survey. You are hereby directed to take necessary action to print the report in the usual manner.[17]

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[16] As quoted in MacIsaac, pp. 197-99. Most of MacIsaac's sources are from the USSBS files in the National Archives. All of the published reports, the histories and some correspondence are also located at the USAF Archives, Maxwell AFB, Alabama.

[17] Memo, D'Olier to Lieutenant Colonel McMurrin (Acting Chief of Administration), 23 May 1947, as quoted in MacIsaac, p. 199, fn 2.

The report was published and released in July 1947. The battle, in this instance on a local scale relatively speaking, ended in a draw. It had been a rather petulant and puerile quarrel, justifiable only in the broad over-view of what was hopefully expected of the Survey and the vital importance of mission and capability to each service. No one was satisfied, no one had won, and neither man covered himself with glory. The larger-scaled "war" between the services continues unabated today, and will no doubt endure so long as each individual service must competitively present its request for livelihood annually to the members of Congress. It will continue also, and to a considerable extent with some justification, because a superdynamic technology continues to antiquate a weapon often before it can be produced. As technology improved man's ability to kill his fellow man, military service missions change, and with that change comes the ever-present danger of a loss to some of the position, prestige and money that once may quite correctly have belonged to a particular service. Of this battle, the "Anderson-Navy war" was but a small scrap.

Lest the somewhat detailed discussion of the "Anderson-Navy war" leave the reader in a quandary about just what the USSBS (Pacific) Survey did find, a short section is included here to present the most important of those conclusions. They are contained in the Chairman's Report entitled Summary Report (Pacific War) which was actually written by Mr. Paul Nitze. It was prepared during the period after 7 January

1946 when the Survey reassembled in Washington and prior to 1 July when it was issued. Three excerpts will suffice to summarize the conclusions of the Report:

> Based on a detailed investigation of all the facts, and supported by the testimony of the surviving Japanese leaders involved, it is the Survey's opinion that certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated.
>
> The experience of the Pacific war supports the findings of the Survey in Europe that heavy, sustained and accurate attack against carefully selected targets is required to produce decisive results when attacking an enemy's sustaining resources. It further supports the findings in Germany that no nation can long survive the free exploitation of air weapons over its homeland. For the future it is important fully to grasp the fact that enemy planes enjoying control of the sky over one's head can be as disastrous to one's country as its occupation by physical invasion.

And finally:

> We underestimated the ability of our air attack on Japan's home islands, coupled as it was with blockade and previous military defeats, to achieve unconditional surrender without invasion. By July 1945, the weight of our air attack had as yet reached only a fraction of its planned proportion, Japan's industrial potential had been fatally reduced, her civilian population had lost its confidence in victory and was approaching the limit of its endurance, and her leaders, convinced of the inevitability of defeat, were preparing to accept surrender. The only remaining problem was the timing and terms of that surrender.

One other point remains to be made. The technological revolution announced by the dropping of two atomic bombs did not go unnoticed by the Survey Report. The following brief extract would seem a fair

summary of the remarks made:

> Does the existence of atomic bombs invalidate all conclusions relative to air power based on pre-atomic experience? It is the Survey's opinion that many of the pre-existing yardsticks are revolutionized, but that certain of the more basic principles and relationships remain . . . . The capacity to destroy, given control of the air and an adequate supply of atomic bombs, is beyond question. Unless both of these conditions are met, however, any attempt to produce war-decisive results through atomic bombing may encounter problems similar to those encountered in conventional bombing.[18]

General Anderson had hoped this Pacific Summary would give the boost to a separate air force that the European Summary had not. He was totally devoted to this cause and hoped his efforts on the Survey would result in powerful testimony on behalf of such independence. This was chiefly his doing, although as mentioned earlier, Generals Arnold and Spaatz had the same idea, probably others as well.[19] He was considerably disappointed when Nitze's report stuck to historical fact for the most part, declaring that the Pacific war was too unique and the development of new weapons too recent to make it possible to say that specific "signposts" in this war would be applicable in a similar way to other situations.[20] This worried Anderson but the prompt acceptance of the Report by the press eased his mind. It might not have been

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[18] USSBS, Pacific, Item No. 3, Summary Report (Pacific War) (Washington: GPO, 1946), pp. 26, 28-29.

[19] Letter, Burchinal, 19 March 1970.

[20] Summary Report, p. 27.

solidly for an independent force but, at the same time, it was not a deterrent to obtaining it.

What really bothered Anderson was the fact that Nitze chose to conclude his report with two and a half pages of "Recommendations." Looked back upon, these recommendations seem quite harmless. The Survey noted the need for:

1. Action to encourage adequate research and development.

2. Action to insure adequate intelligence during peacetime.

3. Action to integrate our military establishments.

4. Action to increase the national appreciation of the necessity for continued strength of the United States as a force for peace.[21]

It is worth noting how well and completely these recommendations have been adopted in the years after the Survey. In the first instance all the services, and the President, have research advisors and organizations; in the second the CIA and the Defense Intelligence Agency (DIA) improve our peacetime knowledge; in the third the National Defense Reorganization Act of 1947 did put all three services under one head; and, in the fourth, the doctrine of strategic deterrence became the cornerstone of our foreign policy during the 1950s and has continued so with slight modifications.

It was in regard to the third point that General Anderson became exceptionally upset. The Survey expanded upon the recommendation

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[21] Ibid., p. 30.

by pointing to the inefficiency in the Japanese military structure and its contribution to their defeat due to their inability to coordinate. While the United States did somewhat better, it still left a great deal to be desired--an opinion the civilian Chairman and his Directors could no doubt form simply by watching the "Anderson-Navy war" in progress. While the Congress was actually considering the problem of what the press called "unification," the Survey recommended a "department of common defense" which would be oriented toward air and new weapons and have within it the Army, Navy, and the coequal Air Force. To that point, Anderson had no objections, nor, it would appear, would any of the AAF greats who had waited so long for the Survey to produce just this very conclusion, but the recommendation continued by spelling out what the Air Force's coequal mission should be. They were to have the primary responsibility for "passive and active defense against long-range attack on our cities, industries and other sustaining resources; for strategic attack, whether by airplane or guided missile; and for all air units other than carrier air and such land-based air units as can be more effective as component parts of the Army or Navy. The mission of such a new establishment would differ considerably from that of an autonomous air force and would, in certain respects, require additional and broader experience than has heretofore been required by the Army air forces alone."[22]

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[22] Ibid., p. 32.

What puzzled Anderson, Arnold, Spaatz, Kuter and others was the "passive defense" recommendation, and the statement that land-based air units might more properly belong to the Army or the Navy. Certainly this was not the hoped-for indorsement of all air under a single unified command. After all his advice and patient explanations to the Survey staff Anderson felt somewhat betrayed. Even before the Report was issued on 1 July 1946, Anderson sat down and wrote out his lengthy objections to the Survey Report. He then took the extraordinary step of addressing them to the Secretary of War through the Commanding General, Army Air Forces. The letter was, consciously or unconsciously, Anderson's sincere attempt to put the proper emphasis where he thought it should be. Never willing to settle for "half a loaf" or second best and not one to easily compromise on what he considered to be vital points, Anderson took the unorthodox step.[23] However, he readily admitted the hardships under which the Survey worked, and that the over-all Report of the Chairman provided ". . . fundamentally sound answers to current major issues relating to our military policy. . . ."[24]

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[23] Letter, Burchinal, 19 March 1970.

[24] Letter, Anderson to the Secretary of War, Subject: Summary Report, USSBS, 11 July 1946, as reproduced in Air War College Correspondence Course, Vol. II, "Command and Employment of Military Forces," Part D, (Air University, 1952), pp. 14-22. The quote is from page 22. After Anderson retired he published the full text, which was never released officially, in the magazine he then edited. See "Report for Consideration of the Reorganization of the Armed Forces--1946," The Air Power Historian, V, No. 3 (July 1958), pp. 180-94.

This was exactly what worried Anderson. The report was so good, and already so widely accepted, that there existed a danger of overlooking some of the basic truths that were not emphasized sufficiently or at all. It was with this in mind that the General had taken the unusual step of writing a letter to the Secretary. For years before the war the United States struggled to determine the proper role of air power. The Baker and Morrow Boards in the 1930s had failed to foresee the eventual role of the airplane in war. Now the Survey had the best opportunity to make up for past inadequacies and furthermore, had the cold, hard facts at hand to prove the point. Had the report been concerned only with determining the effects of strategic air action--as was its basic concept, Anderson probably would have had little to say about the ultimate findings. When the Nitze summation went beyond this objective and expressed opinions on future military strategy, organization and policy, the General felt it was time to let someone know that despite the fact that he was the Senior Military Advisor to the Survey he did not accept its findings wholeheartedly.

The Chairman's Report stated conclusively that the Survey's Pacific findings supported its European conclusion that ". . . no nation can long survive the free exploitation of air weapons over its homeland."[25] It had failed to emphasize that Japan proper had been bombed only in the last five months of the war during which only a fraction of the air force

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[25] Summary Report, p. 28.

that would have been eventually employed against her had dropped 90 per cent of the total tonnage dropped on her homeland. Even then air power was being used, Anderson went on, as an ancillary force, as one means of achieving the ultimate, planned-for invasion of the Japanese homeland, and was not granted the needed autonomy of operation of which air was capable. This same "ancillary force" thinking, according to the General, had restricted long-range plane development before the war, and had prevented the full exploitation of air power elsewhere during the war.[26]

The rapid advance of air power technology during the war led Anderson to venture into the field of prophesy. Military strategy of the past was no longer completely valid. "In the future, the range of air weapons and their ability to penetrate enemy air defenses will be fundamental considerations in the development of a nation's primary striking force. . . . It is extremely unlikely that, in any future war, we will ever be given the time to prepare for and conduct a stepping-stone campaign of the type we fought successfully in the Pacific."[27] Our planes of the future must have the range and ability to reach the enemy and penetrate his defenses. When that is accomplished, Anderson argued, "the mission of air power has ceased to be ancillary. It has become

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[26] "Report for Consideration," pp. 184-85.

[27] Ibid., p. 186.

primary."[28] On this point future events proved Anderson absolutely correct.

Next the General took up the most worrisome part of the Report so far as he was concerned. What, he asked, was the proper military organization to exploit this new-found potentiality of air power? He agreed generally with the Survey's recommendation in favor of unification, so long as it was three coequal services under one head, but he felt this excellent point had been weakened by the Report's attempt to define the military mission of the third service and the implied division of air power between all three coequal services. He felt the facts assembled so painstakingly by the Survey bore out the recommendation of the third, coequal service but did not qualify the Survey to define its mission. He felt the Survey was ". . .preconceiving the pattern of future war and is restricting and limiting the agency which operates in the third element to passive and active defense and long-range attack."[29]

As if the limitation of the mission were not enough, the Survey had implied that the nation's air fleet was to be divided between the newly created air force, the Navy's carrier fleet and Marine air arm, and even the Army. To Anderson this dissection of the "Air Arm" was unsupportable in data gathered by the Survey and, once again, the Nitze report had no business involving itself in such matters. As he stated

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[28] Ibid., p. 187.

[29] Ibid., pp. 190-91.

in his letter to the Secretary:

> This proposal is contrary to the broad objectives of unification and, if adopted, will effectively vitiate the military potentiality of air power. If this policy is pursued, air power will be robbed of flexibility and will lose the ability to effect decisive concentration during that phase of war wherein air operations constitute the major effort.[30]

Anderson recognized full well from his experience in the just-concluded war that if the instruments of air power were divided between three services there was no hope of useful coordination to allow for concentration at the most crucial times. In effect the Survey had recommended three relatively autonomous air forces--a situation which, to Anderson at least, would lead only to continued competition and divisiveness. The elevation of the air forces to coequal status was strengthened by the fact that the Survey had stated that this action would ". . . require additional and broader experience than has heretofore been required by the Army air forces alone."[31] Yet the recommendation for dividing up the air resources hamstrung the newest service before it had really begun and defeated the efforts toward unification by sowing the seeds for interservice rivalry. "In my opinion," Anderson summed up his argument on this section, "this proposal is nullified by all of the experience of the past war and by the data assembled by the Survey itself."[32]

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[30] Ibid., p. 192.

[31] Ibid., p. 190; Summary Report, p. 32.

[32] Ibid., p. 192.

In an effort to show just how incorrect the use of statistics in the Nitze Report had been, Anderson complained about the Survey's use of statistics to prove a point. He called the Secretary's attention to the page in the Chairman's Report (page 11) which quoted numerous statistics on how well the Navy submarines and carriers had done in sinking Japanese shipping. Then he proceeded to make his point:

> Statistics may be used to support the solution . . . but they may easily lead to fallacious conclusions if not properly evaluated. For example, the primary mission of submarines is to sink ships. In the furtherance of this mission, they devoted practically all of their effort in the Pacific and sank more than 50 per cent (sic) of the Japanese merchant fleet. The Army Air Forces sank only 19 per cent of the Japanese merchant fleet, according to the Survey's figures, but, in so doing, devoted only 1.7 per cent of their total effort. This latter fact is neither analyzed nor stated in the Summary Report. Simply the figures on tonnage sunk are presented. This type of presentation, even though innocent of bias, can easily confuse the layman and invites an improper evaluation of the potentialities of weapons.[33]

General Anderson concluded his memorandum to the Secretary of War by admitting that the job of the Chairman was difficult and the variance of the advice he received did not make it any easier. It was the "lack of pointed emphasis" as well as the "projection" of the Survey Report that was the basic reason for his writing the lengthy rebuttal. Yet, Anderson was willing to admit, possibly since he had played such a large role in the whole affair, that ". . . with certain exceptions previously noted. . . ." it was, as noted earlier, fundamentally sound in

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[33] Ibid., p. 193.

its answers to the major issues of military policy, and, further, that it ". . . constitutes a basis for evaluating air power as an instrument of future military strategy." Having softened his criticism in this manner, he affixed his signature to the lengthy letter he chose to call a memorandum. The letter went forward, but Anderson never received a reply, and even after he had retired he never knew exactly what had happened to the letter. Successful in its mission or not, it was the device whereby Anderson set the record straight as he saw it--and he was very close to the record. It was a cogent analysis of the Survey Report of Pacific USSBS and was used in later years as assigned reading for students of the Air War College even after Anderson had ceased to be its Commandant.[34]

The Survey had hoped to end its work by the end of June 1946. This goal proved impossible of attainment. It was the late spring of

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[34] Ibid., p. 194. Later in 1946, Anderson answered Major General Follett Bradley who had written saying that "In talking with Curt LeMay yesterday, he told me that you had made a splendid critical analysis of the report of USSBS." Anderson referred to his letter saying that it ". . . was intentionally kept rather brief in order to give greater assurance that it would be read. It is still my hope to make a more comprehensive evaluation of that survey at a later date. I consider this a definite military requirement which I must satisfy. In the final report of the Survey it [land-based air] was the point which caused me my greatest difficulties with the Chairman's office, and which I was unable to get into an acceptable form from my point of view. . . . I could not prevent the Survey from making the statement that 'Such land based aviation as could be more effectively employed by the Navy' should be so assigned. Key members of the Air Staff felt that I was unduly concerned on this point, but I believed then and still do today that this phrasing and its inclusion in the report was to satisfy a definite objective." Letter, Anderson to Bradley, 25 October 1946, file, "Personal Correspondence," Archives 168.7006-1.

1947 before the last reports had been sent to the printers and most of the personnel had departed for other assignments. The Reports had been widely and well received by the press and public--a fact not lost upon the Army Air Forces in their fight for autonomy. On the whole, the Survey historian reported, things went more smoothly than they had in Europe. He acknowledged the "Anderson-Navy war," which he chose to consider a "serious controversy" kept under control by the firm neutrality of the civilian heads. The controversy had, after all, developed "naturally" over the "respective contributions of the Navy and the Air Forces to the ending of the war against Japan. . . ." The historian felt all this simply made a better argument for the case of unification and the civilian control of the Survey.[35] On 8 October 1947 the last person assigned to USSBS departed. The first deliberate evaluation of the capability and accomplishments of a service and a weapon under stress of combat was officially over. The results have become a cornerstone for the commitment of the air strength of this nation to further its national aims.

General Anderson had long since moved to Maxwell Field, as it was then called. With him from his Survey associates, he had brought Captain Mary Helen Tressler, his WAC aide, and Major McClatchy, his pilot along with Captain Brooks, his navigator, both for duty in the ever-faithful B-17 that had become the General's pride and joy. Once the AAF Report, Air Campaigns of the Pacific War was released, Anderson's

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[35] Beveridge, III, pp. 223, 253-54.

direct feud with Admiral Ofstie was at an end. Not so the "war" against the Navy's encroachment into the prerogatives of the new service. This antagonism burst forth nationally in the famous B-36 bomber controversy in 1947-48.[36]

From the emphasis previously placed on the "Anderson-Navy war" it is possible to be misled into thinking that General Anderson spent all his time on the Pacific Survey feuding with the Navy, and Admiral Ofstie in particular. This is not so and the several reports the Military Analysis Division put out, as well as the advice he gave on others, plus the traveling he undertook to gather the data, attest to this. For his outstanding services from May of 1945 to April of 1946, General Anderson was awarded the Legion of Merit. For his work on the European Survey he had been decorated with the Bronze Star, action which was now rescinded and the higher decoration awarded for his collective work on both Surveys. He also received an oak-leaf cluster for the Army Commendation Medal he had won for his work on the European Survey.[37]

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[36] Shortly after the National Security Act of 1947 made the AAF the separate USAF, the Navy challenged the reliance upon, and budgetary appropriations for, the land-based strategic bomber of which the B-36 was then the best available. The Navy felt the aircraft carriers, and subsequent super-carriers, were better able to handle the strategic air offensive. It was necessary for the President to call the service secretaries together for two conferences in 1948 to achieve agreement upon respective missions. The Berlin Airlift and the increasing Cold War resulted in a temporary Air Force victory, but no permanent easing of the AF-Navy wrangling.

[37] War Department General Order No. 147, 9 December 1946, para. VII. File, "Awards, Commendations and Decorations," Archives 168.7006-20.

So famous a set of documents as the Survey reports would not stay dormant after their public release. Nor did General Anderson's part in their accomplishment end with his departure for Maxwell. Admiral Ofstie printed the Navy's version of the Pacific war in the December pages of Air Affairs magazine. Once again Anderson saw red and wrote a rebuttal article giving his own version, and that of the AAF unofficially, in the same magazine the following summer. Nothing new was contained in the two articles.[38] In September 1947, D'Olier wrote Anderson to confirm that the work of the Survey was finally finished. A measure of the personal regard the former held for the latter is indicated by the request D'Olier made for a photograph of the General. He wanted to hang it on the wall in the company with those officers of World War I whom he had met and escorted as the first national commander of the American Legion--Marshal Foch, General Jaques, General Diaz and Admiral Beatty, as well as General Pershing. He was planning a World War II collection and wanted Anderson's portrait there.[39] The two men corresponded several times thereafter, usually on matters pertaining to the Survey such as D'Olier's reference to a magazine article by General Spaatz in which the latter spoke highly of the Survey and

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[38] Rear Admiral Ralph A. Ofstie and J. A. Field, "War in the Pacific," Air Affairs, I, No. 2 (December 1946), pp. 196-217; Major General O. A. Anderson, "Air War in the Pacific," Air Affairs, I, No. 4 (Summer 1947), pp. 541-56.

[39] Letter, D'Olier to Anderson, 12 September 1947 in file, "Personal Correspondence," Archives 168.7006-1.

advocated the things it had recommended.[40] Paul Nitze also remembered with great pleasure his association with Anderson. In March of 1950 he reflected to a mutual friend that Anderson's contribution to the Survey was "the most important of all the participants," and while he had disagreed with the General on a number of things, he held him in "highest regard and admiration."[41]

Shortly after the Andersons were settled in their Maxwell home an invitation arrived for the General to address the Royal Air Force Staff College in England. His topic was announced as "Planned and Applied Strategy of World War II." This time Mrs. Anderson decided to go along. Since the General and his crew flew in his beloved B-17, she was forced to travel alone, commercially, but she joined the General at the Grosvenor House in London. It was a first trip abroad for Mrs. Anderson and the couple took in the sights of war-weary London after the General's well-received lecture.[42]

The two Surveys, Europe and Pacific, had occurred in little more than a year. It had been a period of eye-opening activity, of careful but rapid assessment, and of learning firsthand of the truths

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[40] Letter, Anderson to D'Olier, 12 October 1948, file, "Official Correspondence," Archives 168.7006-4.

[41] Letter, Colonel Ramsey D. Potts to Anderson, 24 March 1950, file, "Official Correspondence," Archives 168.7006-5. Potts and Nitze had been at the same dinner the previous evening.

[42] See numerous letters in file, "Correspondence Pertaining to Speaking Engagements," Archives 168.7006-6.

and false concepts of air power. To the everlasting credit of Anderson, and the other prewar planners of AWPD-1 fame, the concepts they adhered to proved to be more correct than false, even without the atomic bomb. To their reasoned, logical thinking, this nation owes its aerial dominance in World War II and the succeeding years. With the atomic and hydrogen bombs plus the longer-ranged bombers and missiles, a new concept of warfare based upon air power was thrust potently upon a world that craved peace. The new air power doctrine was basically what it was in the 1930s. There was even greater emphasis on control of the skies than before, but once this was achieved the outcome was conclusive and incredibly swift in all-out war. Anderson had been given the rare opportunity of being present at the beginning, the testing, and at the evaluation. He came away with several ironclad beliefs which he took with him to his new duties at the Air War College. He had seen enough to convince him of the capabilities of air power, of the supremacy of air power, of the necessity for a separate and autonomous air power arm of the service and of a need to adjust the strategy and tactics of the new air arm to meet the far-flung foreign policy commitments of the United States. Most of all he felt a growing fear of the designs of Soviet Russia against his rapidly-disarming country. The only difference, as he saw the situation, between survival and disaster for the United States was possession of the atomic bomb. It was a topic that would occupy much of his time in his new assignment.

CHAPTER X

AIR WAR COLLEGE

In the summer of 1940, Major Muir S. Fairchild presided over the graduation of the last class of the Air Corps Tactical School at Maxwell Field prior to its being closed. Prewar expansion was demanding more than the relatively small Air Corps could deliver and the School's faculty and students were needed elsewhere in other endeavors. Six years, and one World War later, Major General Fairchild convened a conference on the establishment of a series of three professional schools by the Air Forces for the purpose of educating its officers. In his opening remarks he said:

> It gives me a great deal of pleasure to welcome you . . . to Maxwell Field. For most of you it is a welcome back to Maxwell Field and this conference room where the old Air Corps Tactical School held forth. Personally, it gives me very real pleasure to have the opportunity of opening this first formal business activity of the new Army Air Forces School from this same platform from which, with great regret, I permanently adjourned the old Tactical School in July of 1940.[1]

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[1] Major General Muir S. Fairchild, "Introductory Address," 18 February 1946, as quoted in James C. Shelburne, "Factors Leading to the Establishment of the Air University," (unpublished Ph.D. dissertation, Department of Education, University of Chicago, 1953), pp. 246-47.

The result of this conference, and earlier recommendations that the Air Forces establish their own schools after the war, was a Letter Order initially establishing the Air University and its three component schools, the Air War College, the Air Command and Staff School, and the Air Tactical School.[2] In October of the same year, AAF Regulation 20-61 was issued placing the Air University on a permanent command basis.[3] By then, however, the first classes of the Air War College and the Command and Staff School, begun on 3 September 1946, were well under way.

General Fairchild, assigned as the first Commanding General of the Air University, spoke to the initial student gathering. He reiterated his pleasure at presiding over the reopening of the Air Forces' academic life that he had been forced to disband six years earlier, however the planned dissimilarity of the two efforts might be. He went on to recognize that there was some lineal descendancy to be found between the old Air Corps Tactical School and the new Air University, but that the latter had "a system of schools such as we could only dream about in old days of six years ago." He continued:

> While the tactics and techniques which had been taught at the old Tactical School might have been largely obsolete, it is of the greatest importance to note that the basic doctrines and concepts were not obsolete--they were sound

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[2] Letter, War Department, Adjutant General's Office (AG 352 OB-I-AFCOR (920(d)-M), dated 12 March 1946, History of the Air University, 29 November 1945-30 June 1947, Appendix, Vol. I, p. 4f. Archives 239.01.

[3] AAF Regulation 20-61, 10 October 1946, in ibid., p. 4h.

> . . . . If those basic doctrines and concepts had been wrong we would have created the wrong sort of Air Force. That such was not the case is proven by the results of the Army Air Forces' employment both in Europe and the Pacific.[4]

To command the most senior of the three schools, the Air War College, the Air Forces had chosen Orvil Anderson. There was something just a bit prophetic about the choice. In August of 1945, while he was engaged in the European Survey, Anderson had been interviewed by one of the historians involved in writing the history of the Air Force participation in World War II. One of the questions asked of Anderson was, "Have you ever pictured yourself as chief of an Air Staff College?"[5] In the context of the interview, the question seemed to come from out of the blue. In actuality, the possibility that Anderson might head such an institution was not as unreasonable as it would seem. By the end of the war, his reputation as a logical thinker and a patient, and sometimes impatient, analyzer of the plans and operations of the recent war was secure. His grasp of doctrine, strategy and tactics dating back to his days on the Air Corps Board continued to be remarkable and he was willing to discuss these areas as they applied to relatively new aerial warfare at any time. There is no way of proving that he changed many minds, or that he might not have, but those who have served with him

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[4] Major General Muir S. Fairchild, "Address of Welcome," 3 September 1946. AUL M-39404-2.

[5] Interview, Dr. Bruce Hopper with General Anderson, 6 August 1945, p. 30. Archives 168.7006-33.

never failed to find thought-provoking ideas in what Anderson was saying (often to the point of being loquaciously repetitive).[6] Such a man would seem to be a good choice as first Commandant of the new Air War College. At the time the question was asked in 1945, he had little inkling of the movement afoot in the United States to create for the Air Forces schools similar in structure to those of the Army and the Navy. Consequently, his answer was:

> No, but I think that following this war we will have to have that. We will have to have, as I see it now, three--call them "line schools," or call them what we have called them in the past--the line school, the staff school and the war college. . . . And in those three schools we /will/ no longer teach just air we /will/ teach three-dimensional war, which implies airborne troops or surface forces. Three-dimensional war demands that the commander have three-dimensional concepts. I don't care whether he knows how to fly an airplane or not, but he has to think in terms of three-dimensional war.[7]

The General and his interviewer continued to talk about the curriculum for the Air Forces schools not yet in existence, until Anderson switched the subject to inject a new theory that had been germinating with him. It was a concept he was to expound many times in the course of the next four years, one that, misunderstood, would bring his brilliant career to a close. Ignoring the question asked him, Anderson repeated his concept of three-dimensional war, which was still quite new at the

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[6] Letter, Burchinal, 19 March 1970.

[7] Interview, Hopper, 6 August 1945, pp. 30-31.

at the time, and went on from there:

> . . . maybe we will get away from war. I can visualize keeping the Chase National Bank safe from robbery, just by taking the proper precautions, and I can visualize preventing war on the globe by taking proper precautions. We should never fight a war again. It should always be in the form of a slap, never in the form of that type of war which has just devastated Germany. It can be prevented. But in order for it to be prevented, two things are necessary in the United States: (1) The military echelon must be converted to that as our policy. (2) The political echelon in our two Houses must have enough concept to see the soundness of it and say, "We'll ride with you." The Congress has to accept the military in its demands from year to year.[8]

This latter proposal almost certainly would be unpopular, the General seemed to sense, and he took pains to qualify his second stipulation. From his experiences with the lean appropriations of the 1930s he knew what the Congress demanded before it would release even one dollar for standing military forces of the size he envisioned as necessary to perform his "slap." He also felt that the military would not normally stand a chance of obtaining all the appropriations that would be necessary. Therefore, he proposed the creation of a "strategic echelon" in the military as opposed to the tactical. The former would be composed of the best scientists and thinkers in uniform who would not come from the traditionally military West Point or Annapolis sources. He would like to see in the new echelon some strictly "military" people simply to advise and assist these "thinkers," but overall this should be a select group

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[8] Ibid., p. 33.

that is "never going to go out and parade with the troops."[9]

His organization established in his mind, Anderson proceeded to elaborate on the vital function of credibility he would have his "strategic echelon" play in the post war period:

> This is the echelon that should go to the President, the Congress, and say, "It is our firm conclusion now that we tell this nation / meaning anyone that threatened the peace / to stop doing this, because we consider it as an act of war, a threat, the step to war; and if they don't do that . . . while we've got these two groups of B-29s . . . tell them we will hit them. . . .

As he spoke he became typically excited with his own ideas and his own logical reasoning. So much so that his words seemed to tumble out, sometimes even without proper grammatical organization, but the meaning was perfectly clear. A team of highly-qualified specialists in world strategy was to analyze the conduct of foreign nations--and in this case Anderson clearly meant his current Russian ally--reporting to the President and the Congress when that nation's actions became so out of line as to threaten the peace. He would have this erring nation warned about their conduct, but he held no illusions as to the effect of such words, especially upon the Russians. He would then advocate using the finest airplane in the world at the time carrying in it the world's most awesome weapon, and "slapping" that nation in one quick maneuver that would cause them to cease their activities that were threatening peace. It was, at best, naive of the General to think that any reasonably

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[9] Ibid., p. 34.

powerful, nationalistic nation would allow such a thing to happen without going to war with the United States. He was, whether he fully realized the diplomatic aspects or not, establishing his nation as sole arbiter in the world of what was an "act of war, a threat, the step to war," a politically unrealistic position made possible militarily only because the United States was, at the time, the winner in Europe and would shortly unveil the atomic bomb of which we had the absolute monopoly. What such a policy as Anderson advocated, interesting and even desirable as it might be in the short run, would hold for the future when another sovereign power obtained an atomic bomb and might also set itself up as a world arbiter, he did not consider in the interview. Nor did he consider it greatly later for he had come to realize a genuine distrust of the Russians from having dealt with them during the shuttle-bombing raids in Europe and the study of their doctrine. He seemed to feel that the United States had given in to the Russians too much and that a confrontation was looming with alarming immediacy--a showdown we had to win to prevent the fighting of another war. As a military man he advocated a militarily-slanted solution--an answer he would often expound, which seemed to gain a fair following from among his audiences, but which, because of its horrifying political aspects, would bring his career to an abrupt close.

In Anderson's defense it was not an illogical argument at the time, based upon the tensions developing between Russia and the West

and, from the military standpoint it followed closely the heritage of Douhet whom Anderson had studied at the Air Tactical School before the war. Douhet had envisioned an all-powerful warplane which would deliver such a devastating blow in a single attempt that the receiving nation would be powerless to stand and fight. The AAF's initial difficulties in World War II almost discredited Douhet's basic idea--until the advent of the atomic bomb, that is.

To Anderson this concept made sense in that the threat of atomic bombardment, even in its rudimentary state in 1945, he felt would be enough to keep the peace, or in more modern parlance, deter war. He advocated no gigantic smashing of a nation, rather, just enough to cause the offender to quit. In this area his own concept was weakest since it was manifestly impossible to predict how much was enough, and what little bit more might possibly bring on a desperation war of annihilation. He knew what that could do to a nation for, as he continued to his interviewer:

> I just spent a day in Berlin, two days ago. I guess I'm sufficiently emotional that I wouldn't like to live there. I wouldn't like to have to take a trip through Berlin every few days. That, to me--it gets me down--it makes me despondent . . . . That is a hell of a thing for a civilized person to walk through and see.[10]

It seems inconceivable that any man who could make such a statement would also advocate such a "slap" even in the days before the atomic

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[10] Ibid., p. 35.

bomb was known. There can be no doubt that Anderson loved peace, that the idea of war was repulsive to him, or that he had anything but the very best interests of his country at heart when he made his proposal. That this proposal was fraught with political and diplomatic danger did not negate the fact that it was a means of keeping a force-oriented nation in line. Quite probably there lives more than one diplomat who has at one time or another wished he could end the talks, the petulance, the unreasonableness of his adversary with one powerful stroke. It is speculative at best, but had events gone differently at Potsdam and after in Europe or in Asia, such a solution as Anderson proposed might have had more meaningful acceptance. At any rate in a 1945 interview, he first revealed his thoughts on this controversial subject, later to be talked about as "preventive war" by many solid-thinking citizens.

The writing of the Pacific Survey was far from completed when, on 1 June 1946, the Air War College began operations and Anderson was announced as its first Commandant. It was impossible for the General to leave his Survey duties, nor would he have done so in the midst of his "war" with Admiral Ofstie. To get the Air War College organized, Colonel Sydney D. Grubbs was appointed as liaison officer between the rapidly developing Air University under General Fairchild, and Anderson, still in Washington. As a result of Grubbs' liaison trips to Washington, the formulation of the Air War College curriculum and physical facilities

kept pace with the development of the rest of the Air University. The Air War College took over the top floor of Building 800 on Maxwell Field, scene of the former Air Corps Tactical School. The new Air Tactical School was moved to Tyndall Field, Florida.

One of the decisions Anderson made early in the establishment of the college was to use the seminar system of teaching at the War College. This decision has endured to the present day. Another was to use the problem-solution idea wherein each seminar of student officers was given a problem such as "Determine the peacetime requirements for effective war logistics for the Army Air Forces;" or "Evaluate Allied strategy and the employment of military forces in the war against Japan." To set the stage for each new problem as it began, important speakers in the military, diplomatic and educational fields as well as in the government would be brought to the College for a lecture followed by a completely frank, and usually classified, question and answer session.[11]

There were fifty-five handpicked students in attendance at the War College on the day General Fairchild gave his welcoming address. Because of the haste of organization, and the uncertainty as to how many officers would be in attendance, five of the students were put to work as instructors on various problems in which they had particular competence.

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[11] AWC Instruction Circular 46-8, Problem #8, 6 January 1947; AWC Instruction Circular 47-9, Problem #9, 20 January 1947. Both are filed in Air University History, 29 November 1945-30 June 1947, Appendix, I, p. 8f.

In addition there were twenty-five officers on the faculty plus seven enlisted men and eighteen civilian employees. In the student body were two Marines, three Royal Air Force officers, and five Army Ground Forces officers. The organization was barely completed for the beginning of classes on 5 September 1946, but by the end of the school year, when General Carl A. Spaatz, by then the Commanding General, Army Air Forces and Secretary of War Robert H. Patterson flew down for the graduation on 4 June 1947, the Air War College was fully established and rapidly making its mark in educational circles.[12]

The pace of winding up one job and beginning another at the same time, each in a different location, was hectic, but the Andersons seemed to take it in stride. Not only did they have to move to Maxwell, but the General accepted a speaking engagement at the Royal Air Forces Staff College in England for August of 1946. This talk was the second he had made there and was to become an annual affair due to his personal popularity and thought-provoking speeches. Not only was it nice to be back on the platform again after a wartime lapse, but the General welcomed another trip to England and the continent. This time, the ever-willing traveler, Mrs. Anderson, went along. While the General flew in his B-17, she traveled commercially and they met in London. It was to be one of the most important trips of their lives, for while they were

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[12] Air University History, 29 November 1945-30 June 1947, Narrative, II, pp. 227, 230, and 233. Archives 239.01.

there, the Andersons, long a devoted twosome, became three with the adoption of a baby girl, whom they named Susan. After all the papers were finalized, Mrs. Anderson and Susan returned to the United States, while the General and his party took a swing through Germany before flying back to Maxwell. He returned just in time for General Fairchild's speech opening the first Air War College class in September 1946.

Nor did the concluding of USSBS and the beginning of the Air War College prevent Anderson from resuming the lecture circuit on the home front as well. It was a labor of love, and he had a new cause to pursue in addition to his long-range one on an offensive protection of the United States. Concurrently, in Washington, D.C., a debate was underway on the postwar organization of the American armed forces. All sort of proposals had been made ranging from one unified service wearing one uniform to complete separation, with equalization, of all the services. There were many of the same interservice conflicts of prewar days, now magnified somewhat by the Air Forces' desire for autonomy, the problems of governmental reorganization and the search for the postwar missions of each service in view of technological changes in weaponry. As always there was the constant problem of who would get what share of the budget for each year, and inevitably some jealousy over the rearrangement of the roles of each service crept in. In April 1946 Anderson accepted a speaking engagement with the Rotary Club of Albany, New York. As usual he did not use a prepared text, but his

remarks were summarized in the Rotarian's weekly newsletter. On the problem of national security, Anderson told his audience that weapons were increasing in range, firepower and flexibility while ". . . the problem of defense lags until it approaches the time when defense cannot solve the problem at any practical cost, and there will be no defense except offense." Not only does future strategy require a reevaluation of defense, but the military planners must bring themselves up to date. "Technology is continually upsetting the military concept. The military mind has been reluctant to keep abreast of technology, demanding a 'show me' situation before accepting the new and possibly untried. Thus strategy remains one or two wars behind developments."[13] Essentially, Anderson was trying to say that the same antiquated thinking that held up the development of airpower prior to World War II until it was almost too late, would trap the United States into thinking of conventional defense against the atomic weapons--a situation that, to him, seemed intolerable and completely unreasonable in the light of modern developments, especially airpower.

Not all of the General's speaking was to local organizations and civic clubs. In October of 1946 he was invited to speak to the Naval War College on the subject of "The Present and Future Role of Air Power." No record of the speech exists, but it is interesting, in view of his

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[13] Pamphlet, "Capitol Cogs" (Albany, New York Rotarian Newsletter), 10 April 1946, filed in "Correspondence Pertaining to Speaking Engagements October 1944-August 1947," Archives 168.7006-1.

recent "war" with the Navy that they would even let him speak for fear he would propagandize. On the other hand, the audience was composed of senior naval officers, not likely to be swayed by the oratory of an Air Force general. Admiral Raymond A. Spruance, the Commandant, seemed to like the talk well enough to comment on the ". . . well-considered, noncontroversial presentation of the powerful role played by aviation in warfare . . . ."[14] Either Anderson was more of a diplomat than he would have been thought to be with the unification struggle going on, or the lecture simply did not register with the audience. At any rate, Anderson was invited back in later years so it would seem he stuck more to noncontroversial history rather than to his concern over the Navy's role in the future.

So important did speech-making become with Anderson, that it assumed, at times, almost the status of a second job. Onerous as was the schedule, Anderson thrived on it and seemed to take increasing delight in presenting his personal views on airpower and strategy to any group that would invite him. He was most accommodating as to time and subject, but as often as he spoke, it is obvious that he very often repeated himself. He stuck to the idea of using no script, which very often made him vulnerable to the charge of rambling or poor organization. Even his best friends acknowledged this fault, but it is difficult

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[14] Letter, Spruance to Anderson, 4 October 1946, filed in ibid.

to find anyone who would criticize his platform magnetism and his booming, slightly husky voice. In addition, at the time, Anderson still held the world's altitude record, making him a celebrity as well. The speeches became so frequent in the latter part of 1946, after the War College's break for the year-end holidays, that the General's secretary began furnishing Mrs. Anderson with copies of his speaking itinerary. In part, it read like a modern jet-setter, Birmingham, Alabama Kiwanis Club on 10 December, Selma, Alabama on the 18th, the Institute of Polar Navigation in New York City on the 19th, and after the first of the new year three speeches in as many days at Washington, D.C., West Point, Georgia and Fortress Monroe, Virginia. Nor did his extensive speaking go unnoticed in the higher echelons of Air Forces command.

Anderson was invited to speak to the National War College in Washington, D.C. on 13 January 1947 as the representative of the Army Air Forces. He accepted and proceeded to give his talk. Unknown to him at the time, General Eaker, Deputy Commander of the Army Air Forces, had noticed Orvil Anderson's name on the roster of speakers and wrote General Fairchild to determine why someone higher up in the Air Forces echelon had not been chosen to present the Air Forces picture to the prestigious school. Why, for instance, Eaker asked Fairchild, had not General Spaatz been chosen or even Fairchild himself, since the Army had sent their chief of ground forces and the Navy had dispatched a very senior admiral? Such action might indicate ". . .

that the Air Force was not much interested in the National War College and in the presentation made there; or the possibility that Anderson might in his earnestness make a presentation which had not been cleared by the Chief and might later cause him embarrassment." Eaker was sufficiently upset to send Generals Emmett O'Donnell, Hugh Knerr, and Otto P. Weyland over to the National War College to monitor the lecture and report back to him. Eaker's concern was not apparently that Anderson was speaking, but that the National War College had not invited an Air Forces general of higher rank to talk and that Anderson might be outranked into an embarrassing position. He worried without cause.

The generals' report received by Eaker was apparently relayed to General Spaatz. General Fairchild talked to Spaatz later and the Chief of Staff mentioned the speech in favorable terms to Fairchild. Fairchild, in turn, had forwarded Eaker's earlier letter to Anderson suggesting that the Commandant condense his remarks to a "couple of pages" to insure that they would be read and forward them to General Spaatz for his information. In the meantime, General Eaker had eaten "humble pie" in a personal letter to Anderson which stated that "many sources" had reported favorably on his recent speech. He went on, "As you may have learned, I had some misgiving that the War College had selected you to present the Air Force future whereas it had selected General Devers to present the Ground Forces future and one of the senior admirals to present the Navy side. I am always looking under the bed,

and it seemed to me they might have had in mind downgrading us." After reiterating that the talk had been a good one and was well received, Eaker continued, "There were many mistakes and pitfalls which you could have made and which faced you. They would have been excusable but you avoided all of them with great cleverness." Having read this letter, and having before him General Fairchild's suggestion that he forward a condensation to General Spaatz in brief form to insure that it would be read, Anderson, understandably, was upset and indignant. At the top of the Fairchild note, his secretary had written, "General Anderson didn't consider it necessary to send brief of his NWC talk to General Spaatz. B.I." Anderson, by now one of the most popular speakers in the Air Forces, took Eaker's concern much more personally than it was presumably intended. So far as can be determined he never forwarded a brief of his talk to Washington.[15]

By 1947 most of the initial organizational problems of the Air War College were well on their way to solution, and the pressure on Anderson began to ease somewhat. The final reports on USSBS were about to become a reality, and he found time to rebut Admiral Ofstie's

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[15] Filed in ibid. The various pieces of correspondence referenced are clipped together in the file. "B.I." refers to Betty Ingalls, Anderson's secretary. The General was also pressed into recruiting duty by the Air Force Information Office. He was sent a prepared text to read during a radio interview with Ted Husing, the sports announcer, at a selected point during the Georgia-Alabama football game on 2 November 1946. The text is in the referenced file.

published article in Air Affairs which claimed far too much credit for Naval air in the Pacific war to suit Anderson.[16] It had been a year in which the Andersons had entertained, as visitors and guest lecturers, the great and the near great.[17] With each of these visitors Anderson spent some amount of time. A few were guests in his home, and the correspondence files are full of personal letters of thanks. Many refer to the growing influence of little Susan in the Anderson household. By now she had picked up the nickname "Nugget" due chiefly to her blonde hair and she apparently had her own method of captivating visitors even though she was barely walking at the time.

Having personally supervised the establishment of the curriculum for the first class, Anderson did not stop there. He sat in on most of the lectures, and gave a good many himself, not by virtue of his position as Commandant, but because he was, by actual experience, an expert in many of the fields under discussion. Not only did he give formal lectures, but he was ready and willing to embark upon an impromptu lecture any time. The subjects he chose were diversified,

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[16] Anderson, "Air War in the Pacific," pp. 541-56. His article is less a defense per se than a logical argument that airpower won the war in Japan.

[17] Some of whom were Mr. C. B. Barnard, President of New Jersey Bell Telephone, Lieutenant General Nathan F. Twining, Major General Curtis E. LeMay, Mr. Allan Dulles, Lieutenant General Hoyt S. Vandenberg, Dr. Hugh L. Dryden, Honorable John A. Krug, Secretary of the Interior, Mr. C. R. Smith, President of American Airlines, Dr. Bernard Brodie, General D. D. Eisenhower, Mr. George F. Kennan, Dr. Theodore von Karman and Mr. Hanson W. Baldwin.

but quite often concerned the modern application of the principles of war, and the fundamental nature of the logical reasoning process. He was fond of using a syllogistic type of reasoning. He would move from point to point, citing examples of the past and, throwing in the ultimate goal of the individual or nation, sum up with a logical premise of action even though it might be considerably at odds with current policy. Most of the time his impromptu talks were based upon ideas that required some thought that departed from the usual or accepted. As previously mentioned, Anderson was firmly convinced that the best defense in the next war would be an all-powerful offense. He would reason that technology had improved to such an extent in range and speed and type of delivery that an attack could be made upon the United States in a matter of minutes and a war could be over, so far as effective fighting was concerned, very shortly thereafter. Given the fact that this country did not want to be destroyed in such an attack, and that there was no effective defense against it, he would advocate the threatening "slap" previously discussed. Of course, such an argument could not be reduced to easy one, two, three terms, certainly not when national survival was concerned. However, he would use this reasoning tactic, quite sincerely, to cause his listener to think along with him, even show where he was wrong if possible, and ultimately arrive at the solution that best met the goal--and more often than not it required original thinking and the casting off of old concepts which he repeatedly urged upon his students.

Almost always relaxed and informal around the school except on special occasions, his office was always available. His rapport with his faculty and students was unusually high, and because of this, his influence upon their learning was profound. He was known as "O.A." by both the faculty and students, but was never so called to his face. At social occasions, particularly those which he liked best, in a private home, he could be found with anywhere from two to twenty men gathered around him, perhaps in the kitchen or sitting on stairsteps, discussing, arguing, debating, but always in a sincere attempt to reach the most logical, reasonable conclusion possible.[18] Most often in such circumstances it was Anderson who talked while the others listened and it was the General's theories that were discussed, if not initially certainly before the discussion ended.

The year 1947 was important to the Air Forces as a whole, for in September of that year the National Security Act became law. Providing for a separate Air Force which was immediately set up, the Act was a long-cherished dream of Anderson and many other members of the prewar Army Air Corps. Autonomous in all but name since 1942, the Air Force could now proceed to carry out its primary mission of controlling the air space and establishing the ability to fight therein. Not all was settled, however, among the Army, Navy and Air Force

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[18] Letter, Burchinal, 19 March 1970. General Burchinal served as both a faculty member and a student under "O.A."

as to missions, for as technology changed weapons, questions arose as to who would fly airplanes and over what areas of the battlefield or ocean. It took two conferences in 1948 (Key West and Newport) between the civilian secretaries with their military service chiefs to settle the missions of each branch--a contention that occasionally arises even now when a new weapon arrives on the scene. Generally speaking, Anderson was pleased with the Air Force's new independence. It was one of the causes to which he was totally devoted.[19]

At the April 1947 meeting of the Board of Visitors to the Air University, Anderson presented, in summary, his concept of the educational philosophy of the Air War College. He had introduced, as a major objective, he told the Board, the destruction, in the minds of the students, of prejudice and bias based upon preconceived notions and past experience. He wanted nothing to be immune from thoughtful challenge and by April he felt that his students were being just a bit more wary about expressing solid opinions for fear of being challenged. However, he also felt that the students' opinions once reached, did stand the test of scrutiny, and there was no restriction placed upon answers arrived at. Most particularly, he banned the so-called "school solution." In this way, he told the Board, he hoped the students would not be bound by past military experience just because it had proved to be successful in a particular environment, but would use it merely as a guide to more

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[19] Ibid.

logical, pragmatic answers. He was sold, he told the Board, on the lecture method of presentation, wherein distinguished authorities presented their viewpoints, after which the problem was studied and researched in seminar and library and finally a solution arrived at as the best result of several minds working together. It was impossible to assign extensive research projects due to the limited time available, much as it had been manifestly impossible for the members of USSBS to probe as deeply as they might have into the results of the bombing. "Had he [Mr. D'Olier] allowed two years in each theater, he would still have come home without a completed research." In the short span of one year, Anderson had set the tone for study and the mechanics by which the Air War College would operate in the years to come. The curriculum would be modified many times to keep pace with the changes in the military and political world, but the philosophy was Anderson's from the beginning and it remains so to this day.[20]

As might be expected from one who liked to speak from a platform and who was uncommonly good and well-practiced at it, Anderson scheduled himself for seven lectures to the students during the second session of the school. There is no record of exactly how many times he may have spoken extemporaneously during the first school year, but one thing was certain--the principle of "academic freedom" was firmly

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[20] Draft of Anderson's remarks to Board of Visitors, April 1947, file, "Correspondence Pertaining to Speaking Engagements, October 1944-August 1947," Archives 168.7006-6.

established. From the very beginning, Anderson insisted upon closed lectures which allowed a visiting speaker, military or civilian, to "let his hair down" without fear of being quoted, and the students to question the speaker with equal and unchallenged candor. This policy also has endured at the War College to the present. Anderson's scheduled lectures covered almost every phase of the curriculum, and ranged from intelligence and technology through logistics. So interesting and stimulating were these lectures that Anderson was asked to repeat them year after year. Since he spoke at the most from notes, and often not even from these, the talks varied in content from year to year, but contained essentially the same basic thoughts he wanted to drive home in his public lectures, i.e., that no problem is unsolvable given the proper application of logic and reason, that technology has forced a modernization of the principles of war, of tactics and strategy and has, or should have, changed our national strategy to one of more firm resistance to testing or insult by a foreign country.[21]

There have been various attempts to analyze Anderson's writings; the most serious one concerning itself with Anderson's attempts at theory of future war.[22] Anderson is not now known primarily as a

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[21] The Air University Catalogue 1947-1948, (Maxwell AFB, Alabama, 1947), pp. 31-55. Collection of Anderson's speeches and lectures, Archives K239.7162-6. Hereafter cited as "Anderson Speeches." Anderson made over 60 lectures at the Air War College during his tenure there, of which 25 were taped and 17 transcribed into a bound notebook for use by future students.

[22] Colonel Alfred V. Walton, USAF(Ret.), "An Interpretation

military theorist, since most of what he had to say in his various speeches was more in the nature of a commentary on why the strategy which worked at one time might very well not work at another. Nor did he seem to regard himself as a theorist--rather as a realistic, pragmatic planner. Nowhere in his recorded speeches does he ever mention himself as a theorist. However, this did not keep him from taking a close look at the principles of war as set forth by von Clausewitz and Jomini in the nineteenth century, and modifying them to suit the technological developments of the twentieth in which he lived and of the future as well. For instance, the principle of massing one's forces prior to combat no longer has the importance it once did, for with today's weapons, the massing of troops is an invitation to annihilation. By the same token, the principle of surprise today carries such horrible potential as to be out of proportion to the other principles.[23] Once Anderson had established the idea that the principles of war needed changed emphasis, he often proceeded on a step-by-step reasoning path to the fallibility of military man and his bias. Military men, he believed, were too tradition bound and wedded too much to the idea that what was successful in the past is good doctrine for the future. He blamed the lack of

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of Some of Major General Anderson's Ideas on Planning for Future War," unpublished Air War College thesis, March 1953. AUL M-32983.

[23] The principles of war usually agreed upon are: objective, offensive, simplicity, unity of command, mass (concentration), economy of forces, maneuver (flexibility), surprise and security. Dupuy and Dupuy, Military Heritage of America (New York: McGraw-Hill, 1956) pp. 6-8.

development of the airplane upon this type of thinking, declaring in one talk, ". . . what man thinks a weapon can do or can't do determines the solution to the problem--any military problem from the field of tactics to the fields of strategy."[24] At another time, he criticized those who continued to rely upon past experience as the teacher for the future when he said, "Experience can contribute to understanding only to the degree that concept and logic dictate its processing or its evaluation."[25]

War, after all, Anderson went on to say, ". . . is almost exclusively a product of man."[26] The statement does not seem to be arguable, and by it Anderson sought to emphasize the flexibility needed in planning. If man made war, then man has the power to change or alter the form of war to best suit his immediate or long-range goals. This being so, more attention must be paid to new weapons and techniques and a free mind must consider what the weapon can do, not just what might be desired of it at one particular time. Further, if man made the initial war and its concepts, and can change them at will, then he should avoid at all costs the traditional, stereotyped, the ordinary, and reach out for the imaginative, the creative. He said it best in a draft text prepared for Aero Digest magazine:

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[24] Anderson Speeches, "The Character of War," delivered to the Air War College, 26 September 1949, p. 2.

[25] Anderson Speeches, "Air Warfare," delivered to the Air Command and Staff School, Class of 1948A (nd), p. 2.

[26] "The Character of War," p. 2.

> Progress in any human activity is achieved through a combination of experience and imagination. An understanding and proper evaluation of past experience provides a springboard for the projected thinking, the imagination, the inventiveness, which generates a new solution to a new problem--which changes the pattern and procedures of the past to accommodate the new and different factors bearing on the current and future situation.
>
> The conduct of wars is no exception to this observation. Progress in the development of military science and strategy is vitally dependent upon the soundness of the evaluations of past battle experience and upon the boldness, inspiration and depth of the projected thinking which creates the solution for the future.
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> To arrive at an inaccurate or superficial evaluation of past war experience is to establish an unrealistic point of departure for projected thinking and to be timid, irresolute, and uninspired in forward thinking is to cling to the real or fancied patterns of the past. Both of these evils profoundly affected the course of World War II, and both are having a continuing impact on the design of our military structure for the future.[27]

It is hard to realize a better philosophy for the strategic planners of the postwar world, and whether he intended it or not, Anderson made his most profound contribution to the Air War College, the Air University and the United States Air Force when he taught the current generation of generals to think flexibly, freely, and with creativeness and imagination. In fact, as one AWC graduate put it, "General 'Andy' practically dared you not to think."[28] Greater names have left less a legacy than that.

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[27] Anderson Speeches, "Some Fundamentals of Strategic Thinking," (nd), p. 1.

[28] Colonel John A. McCann, USAF(Ret.), "Air War College 1946-63," Air War College Supplement, II, No. 1 (September 1963), p. 58.

Anderson personally relished the duty as Commandant of the War College. The first class graduated fifty-five students on 4 June 1947, by which time he was already at work on the next academic year. He instituted the writing of a thesis by each student and asked for a much larger lecture hall in an adjoining building which was refurbished and appropriately appointed. The class of 1947-48 was expanded to ninety-seven and this gradual numerical increase was maintained for the next two years with classes of 123 and 136 respectively. To Anderson, nothing seemed sacred in the curriculum, and subject matter changes came thick and fast in order to keep up with military and national developments. The initial emphasis on World War II was rapidly phased down, being replaced by studies in global strategies. In addition to the formal curriculum, exchange visits were held with the Canadian Air War College and most of the student body took a four-day cruise on an aircraft carrier out of Norfolk, Virginia. Anderson personally supervised every change and every scheduled activity. He dedicated himself completely to improving the quality of the Air War College's offerings, including the obtaining of more influential and highly qualified guest lecturers, whom he more often than not, personally introduced to the students.

There was an early satisfaction of accomplishment for Anderson and the War College. The Board of Visitors heartily endorsed his early approach to senior officer education in its first report.[29] Subsequent

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[29] Air University, "First Report of the Board of Visitors," a

correspondence is lavish in its praise of the College and its approach. One such letter, from a Navy Admiral who was invited to speak in the fall of 1947, is a fair summation of what most were saying:

> I always get a big lift out of appearing before the Air War College. Your boys give every indication of picking a person's mind without being swept away by his eloquence and it is a challenge to talk to them. You have imbued them with an intellectual curiosity that promises great things the next time the Air Force has to face the supreme challenge. I prophesy that they will then look back to these days and your leadership and thank a lucky fate for both.[30]

All was not, nor could it be expected to be, sweetness and light in the early years of the College. There were rumors and counter-rumors, brought on, to some extent, by the policy which Anderson instituted of allowing speakers full academic freedom. In one such case a rumor reached Secretary of the Air Force Symington, that the College was teaching or promulgating doctrine to the effect that the aircraft carrier was obsolete and of no value. General Fairchild replied to the Secretary that, "Not only is any such allegation unwarranted, but as a matter of fact I feel sure the Air University presents to its students greater naval coverage in all phases according to the concept and doctrine of the U.S. Navy than is correspondingly true in any other service

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mimeographed, folder-bound report dated 16 July 1946, pp. 50-51, 66, 73-74. AUL 358.0711.

[30] Letter, Rear Admiral C. R. Brown, USN to Anderson, 21 November 1947. File, "Personal Correspondence," Archives 168. 7006-2.

institution."[31] This was not the first time that General Fairchild had stood up for Anderson, as previously noted, and the friendship between the two men was close. When Fairchild left the Air University to become Vice Chief of Staff, he wrote a letter commending Anderson for his fine work and saying, in part:

> . . . The influence which your work as Commandant of the Air War College will have upon the future of our Air Force is beyond calculation at this time . . . . Your clear, straightforward thinking and the critical appraisal which you have brought to bear, not only upon past concepts and doctrines but in the creation of new and advanced thinking, will profoundly affect the future course of our service. From the point of view of your outstandingly unique qualifications for the position which you have filled with such distinction, you have practically achieved that legendary status of being the indispensable man.[32]

Despite the hectic pace of organizing the new school, Anderson kept up with his lecturing and other less official activities. In late September 1947 he again made a trip to England where he spoke to the RAF Staff College after which he made a flying detour for an inspection of the bombed ruins of the Ruhr valley. Back at the War College in late October, he instituted and hosted the first Air Force-civilian seminar in which influential civilians from a variety of occupations were invited for a week of lectures and seminars to aid them in becoming better

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[31] Letter, Fairchild to Symington, 23 April 1948, File, "Fairchild Correspondence," Archives 168.7001-4. As a matter of interest Rear Admiral Ofstie, of USSBS fame, was a guest speaker on 18 February 1948, speaking for 2 hours on the "Fast Carrier Task Force."

[32] Letter, Fairchild to Anderson, 11 May 1948, filed in ibid. Fairchild died of a heart attack on 17 March 1950 while Vice Chief of Staff.

versed in the Air Force, and the Air War College students better informed about civilian opinions. This, too, became a custom that prevailed, although the meeting was changed to the late spring rather than the fall. Nor did Anderson seem at all stinting in the praise he passed on to his faculty and staff, for he was keenly aware of their talents and fine work. He always took the extra step of making sure a letter of praise was placed in an officer's promotion file, evidence of which is throughout his correspondence.

The General's extracurricular speech-making continued to receive public notice partly due to his past record and also to his call for airpower at a time when the new Air Force was being organized. Anderson was invited to speak before the national Conference of Mayors in New York City on 18 February 1948. He shared speaking honors with such names as Georges Bidault, the Foreign Minister of France, Alcide de Gasperi, the Premier of Italy, Bernard Baruch and Ambassador Joseph C. Grew. Toward the end of his address, Anderson noted that a short time before his address General Eisenhower, speaking at his military retirement, had noted that the next war might be determined in a matter of sixty days. Anderson admitted that he did not know where General Eisenhower got his figures, but he felt that such a war might be over even sooner. If the enemy properly understood the effect of atomic weapons, and understood the principles of war, and the United States happened to be no better prepared than they were at the time he was

speaking, then Anderson saw no reason why it should take sixty days. "The period, I think, will be one night, because that would be the proper application of material forces against a nation not prepared to counter." Such, he went on to tell his audience, is the impact of the mass-destruction weapons--an insecurity for America which she has never before had to feel.

> It is the reason why at this particular time America has to recognize that this evolutionary advance in terms of weapons, in terms of range, speed and power to penetrate, has upset the very nature of war to a much higher degree than did World War II.[33]

The reaction from the Pentagon was immediate. It appeared to someone reading the papers that a Major General had disagreed in public with a four-star General, a Chief of Staff, and a national hero as well, over how long a time it would take to destroy the United States. Spaatz wrote a letter to Fairchild who in turn asked for an explanation from Anderson. As usual, Anderson had not spoken from notes or a prepared text, but he recreated his talk as best he could. He pointed out that he had admitted in his talk that he had not read Eisenhower's text and he did not know where the figure of sixty days came from, but, he told Fairchild, he made some basic assumptions, each of which was prefaced by "if." He assumed that an enemy had the atomic bomb, that

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[33] U.S. Municipal News, XV, No. 5 (1 March 1948), p. 19, filed in "Correspondence Pertaining to Speaking Engagements, September 1947-May 1948," Archives 168.7006-7.

we would remain weak, that the enemy would realize this and knew enough about the principles of war to launch a surprise attack at a time that best suited him. If, and he meant that literally, the enemy did all of this, he did not see why it would take the sixty days to end the war, and he felt it would be more like one night. Anderson assured Fairchild that he had not intended any quarrel with Eisenhower over time or anything else, but merely to give even greater emphasis to what the retiring Army Chief of Staff had said. He added a rather prophetic phrase at the end of his reply to Fairchild which said,

> Hindsight re-emphasizes the need for excessive caution to prevent affording the press any phrase that can be extracted and translated into a sensational headline. In the future, I shall make a special effort to keep my remarks free from possible headline phrases by resort to manuscript presentation where press representatives are in attendance.[34]

Fairchild wrote Spaatz incorporating Anderson's reply and the incident was allowed to pass so far as further correspondence indicates. Later, in a reply to an invitation to speak to the Civitan Club of Knoxville, Tennessee, Anderson notes that he was in the process of obtaining clearance for his speech from Washington, an action hitherto quite foreign to him.[35]

In June of 1948 Anderson received his permanent promotion to

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[34] Memo, Anderson to Fairchild, 5 March 1948, in "Fairchild Correspondence," Archives 168.7001-4.

[35] Letter, Anderson to T. H. Goodman, 23 March 1948, file "Correspondence Concerning Speaking Engagements, September 1947-May 1948," Archives 168.7006-7.

Major General. In the permanent ranks he had gone as high as he could go. Further temporary advancement depended upon other jobs in other places, most likely in the Pentagon, an area the General knew well but to which he had no real inclination to return. He enjoyed the life of an educator, the challenge to think and to explore and the satisfaction of seeing his graduates open their minds to bigger ideas. He had no illusions about his own educational qualifications--two years at Brigham Young did not compare favorably with the Ph. D.'s and college presidents with whom he associated, but he never felt ill at ease and he was accepted in the academic community. In October 1949 he addressed the Association of Land Grant Colleges in their annual meeting on the subject of "Strategic Bombing." However, if he used a prepared text for this particular address it is not in the files, nor is there any recorded evidence of prior clearance of the address.[36]

His experience with the speech to the Mayor's Conference in 1948 did not stop Anderson from expounding his causes from the platform. Very much in demand, he made twenty-eight speeches in the period from January to September of 1949, among them being the yearly trip to the RAF Staff College in England. This total does not include his official lectures to the War College. In May 1949, the irony of it all caught up with Anderson, and his good friend, Dr. McKnew, of

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[36] "Correspondence Pertaining to Speaking Engagements, September 1949-April 1950," Archives 168.7006-10.

the National Geographic Explorer days, could not resist the temptation to kid him. McKnew had called Anderson's office at Maxwell only to be told that the General was absent with students of the War College class on a cruise on, of all things, an aircraft carrier. Those who knew the General's passion for "giving the devil his due" were not too surprised, but those who remembered his "war" with the USSBS Naval representatives could not help but find the thought of Anderson on a carrier more than a little humorous. "So, it has come to this at last--I can hardly believe it but they said it was so," McKnew chided.[37]

"Once a pilot, always a pilot," goes the old cliche, and in Anderson's case this was true. He flew to most of his speaking engagements, and after his beloved B-17 was taken away from him due to the expense of maintaining a four-engine bomber at Maxwell, a B-25 was placed at his disposal. Usually his aide would pilot the aircraft, although the General was fully qualified to do so, and Anderson would sit in the right-hand (co-pilot's) seat. This was the case when, on 17 December 1949, Anderson was involved in yet another airplane accident. Captain H. C. Traylor, his aide, was preparing to land at the Naval Air Station at Manteo, North Carolina for a refueling stop on the way home from a speaking engagement. As the B-25 touched down at the extreme edge of the short runway to allow for a full length roll if needed, the left main

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[37] Letter, McKnew to Anderson, 2 May 1949, file, "Personal Correspondence, 1948-1954," Archives 168.7006-2.

wheel struck a piece of salvaged road cement which was to be used for fill during a projected runway expansion. The gear twisted instantly, but held up for a roll of about 100 feet before collapsing. The left wing and propeller suffered major damage but neither of the plane's occupants was injured. Anderson later commended his aide for a superb job of controlling the damaged airplane.[38]

In late May 1950 the Air War College graduated 136 officers in its fourth class. It had been a busy month for Anderson, escorting dignitaries and speakers, making speeches and accomplishing the multitude of last-minute details necessary to the wind-up of the school year. In the middle of the month, he received a rush request to substitute for General Vandenberg who was unable to fill a commitment to speak at the National War College. As a result, Anderson returned to the scene of a former speech that had caused eyebrows to be raised in Washington. This time instead of General Eaker sending senior officers to monitor the speech, he appeared for the Chief of Staff and spoke on the "Role of the Air Force in Global War."[39] It is a logical assumption that this speech was cleared with Washington prior to delivery, although no records confirm or deny this. The event itself had a touch of irony in

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[38] "Official Correspondence, September 1949-October 1950," Archives, 168.7006-5.

[39] Letter, Lieutenant General Idwal H. Edwards to Anderson, (nd). The speech was delivered on 17 May 1950. File, "Correspondence Pertaining to Speaking Engagements, 27 April-13 October 1950," Archives, 168.7006-11.

in view of past unpleasantness, but it is included here to indicate the high regard in which Anderson was held by Air Force leaders at the time.

The invasion of South Korea in June by North Korean Communists caused the Air Force to close the Air War College temporarily. Anderson protested this action pointing out that professional military education is a critical requirement in the evolution of an effective Air Force and an essential factor in the nation's security. It would be shortsightedness on the part of the Air Force, he felt, to stop producing, on an orderly basis, highly qualified senior officers. He also noted that the Army and Navy did not close down their senior schools at this critical time. Apparently his logic won out and in October word was received that the War College could begin an abbreviated course on 8 January 1951.[40] It was a victory that Anderson was not around to savor.

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[40] AWC Supplement (September 1963), p. 60. The regular ten month course was resumed in 1951.

CHAPTER XI

THE IMPATIENT WARRIOR

To Orvil Anderson, the United Nations "police action" in Korea in the summer of 1950 must have seemed a verification of what he had been saying all along. Our nation initially appeared too weak militarily for any kind of war except all-out nuclear conflict, and the challenge of a World War II, conventional-type war (if any war can be described as conventional) fought at the far end of a long supply line, had sent our forces reeling back in a series of defeats. The United States was the possessor of a bomb they never intended to use except in defense, and unprepared, due to cuts in funds and rapid demobilization, to fight a conventional war. Beyond this, Anderson's thinking was apparently on a much grander, broader and more inclusive scale. Korea presumably would not have happened, he would reason, if, in its recent position as the sole possessor of the atomic bomb, our leaders had used its destructive power to threaten the Russians with extinction if they did not give up Eastern Europe and halt their apparently aggressive intent. Our repeated insistance upon only the defensive use of the atomic bomb made

the whole idea of war in the atomic age a farce since there seemed to be no way in which defensive use of atomic bombs could possibly triumph. Anderson subscribed to the theory that there was no defense as good as a strong offense. It was an old theme with him, one to which he had addressed himself at great length many times. There was but one small step from this generally-held concept to one of first-striking a nation that threatened America's national security.

What Anderson so desperately wanted his service and his country to do was to take a look at old conclusions and precepts in the light of new evidence and technology. In this respect the Air Force was well ahead of its contemporaries for it was dealing in the newest area of warfare, the air. This new dimension, Anderson kept saying, had revolutionized warfare, had made nations vulnerable to devastation where before only massive invasions with months and years of preparation could threaten. Now, he said over and over, a nation that is highly industrialized such as the United States becomes a prime target for a surprise aerial strike with atomic weapons. He had seen at first hand the appalling damage wrought upon Germany and Japan, and he knew very well what could be done in this modern age. Any nation capable of producing an atomic bomb and all the related equipment, was sufficiently well-developed that its cities would provide inviting and proper targets for the strategic use of atomic weapons. Our nation was an excellent example of this and to survive in any future war of "super" weapons it

could not afford to adopt the pious position of not striking the first blow.[1]

To those who felt that such a position was morally reprehensible, he often would reply curtly, "whose morals?" Survival was basic to any moral consideration, and who is there, he would challenge, who would deny that, had American intelligence been up to finding the Japanese fleet on 6 December 1941, the United States should not have attacked? Lives would have been saved then, and "if we wait for the overt act of war, can we be sure that we can then go into action and win?" "Surely," he would go on, "we as a people do not intend to suffer a lethal blow before retaliating."[2] Anderson's remarks would indicate a disregard for the diplomatic and political situation existing even amid the tensions of 6 December 1941. It is very doubtful that President Roosevelt would have ordered an attack upon the Japanese naval task force had its location been known or that the American people would have condoned such action even then. Militarily a crushing blow against the Japanese naval forces, assuming our Pacific forces were capable of delivering it, would have saved American lives the following day, but it would have cost many other lives and would have made diplomatic negotiations then underway manifestly impossible resulting in a war for which this country would

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[1] Text of Anderson's briefing of Air University Board of Visitors, 9 November 1947. File, "Official Correspondence, September 1947-May 1948," Archives 168.7006-3.

[2] Montgomery (Alabama) Examiner, 25 May 1950, p. 2.

have been blamed and which might well not have had the popular support needed.

Whenever Anderson backed off from the more aggressive "hit them before they hit us" approach he made much more statesmanlike comments. He wanted a strong nation, well prepared to resist, and thereby deter, attack. To a group of conventioneers in New York City he stated:

> Traditionally the United States will fight only if her security or the security of other peace-loving peoples is threatened. We have no aggressive intentions. If our position as a champion of the dignity of man and human rights were threatened by a totalitarian power which has indicated it has no such standards, we would clearly be at fault if we did not use the key means at our disposal to defend ourselves. We are not only morally justified but morally obligated to develop our maximum strength to provide for our security.[3]

As the Korean war progressed, with the United Nations forces being squeezed into a perimeter around the small seaport of Pusan, more and more people seemed to feel that some sort of challenge should be presented to the Russians to either halt the sponsorship of the North Koreans or face the full atomic might of America's strategic armada. The Air Force's heavy bombers, having early destroyed what few strategic targets there were in North Korea, were momentarily of little assistance in close support of the war being fought on the ground. Two years

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[3] Quoted from an extract of Anderson's talk to New York State Convention of the Air Force Association, Garden City, New York, 13 May 1950. File, "Correspondence Concerning Speaking Engagements 27 April-13 October 1950," Archives 168.7006-11.

before, in 1948, at the Air War College the students arrived at a solution to one of the study problems presented them by agreeing that if all measures short of direct military action failed to contain the threat of Communism, then to preserve our national life the United States should consider military action using weapons of mass destruction prior to the Soviet development of these weapons. This, the student solution continued, ". . . in final essence appears to be the only ultimate means of attaining security of our nation and the world."[4] A year later a military author wrote of the awesome power which was so carefully restrained in Korea. Power really does not exist unless there is a will to use it, he brought out. This will be a variable factor in a democracy, depending upon the temper of the people at any one given time. It is doubtful that the American people would ever subscribe to the type of international diplomacy that threatens another nation if they do not do what we want them to do. Yet, it is equally doubtful that the United States wants to be the "sitting duck" for another Pearl Harbor, especially in the atomic age when the cost would be so horrible. From Lexington and Concord to Belleau Wood, the United States has taken the initiative when an inflammatory incident required it. Historically, then, it hardly makes sense to say that we would not fight until attacked, especially if the cause appeared to be "human rights," the "dignity of man," or "national freedom." From the standpoint of military security it makes even less

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[4] As quoted in Historical Study #139, p. 432.

sense, since we would be giving up two of the basic principles of war of which Anderson spoke so often, initiative and surprise. To state that we will not use atomic weapons unless attacked weakens us diplomatically and casts doubt upon our ultimate will to fight without which all the bombs in the world would be of no use.[5] This line of reasoning seems valid to one who loses patience with America's enemies and their tendency to negotiate for peace by not making any concessions while expecting many from the other side. It seems to ignore the political, diplomatic and especially the humanitarian reasons for doing all possible short of war to spare mankind a nuclear slaughter. Being the one to decide when all else has failed and a first strike is the only way would be a task of terrible responsibility.

By August and September of 1950, the idea of what was rapidly coming to be called "preventive war," usually in the press, was being heard more and more throughout the United States. General MacArthur, the United Nations Commander in the Korean war, was asked to send a message to the national convention of the Veterans of Foreign Wars meeting in Chicago. What the VFW got was a cabled statement on the value of Formosa in an unbroken chain of islands off the Chinese mainland which would allow the United States to "dominate with airpower every Asiatic port from Vladivostok to Singapore." Clearly MacArthur felt the

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[5] Dale O. Smith (Colonel USAF), "Air Power as Peace Power," Air University Quarterly Review, III, No. 1 (Summer 1949), pp. 6-8.

United States could police the Far East by launching disciplinary air strikes. The General failed to clear the text of his message with the White House or the State Department and its release shocked and infuriated both President Truman and Secretary of State Dean Acheson. Truman ordered MacArthur to retract his message, which he did, but not before its contents had reached the press.[6]

Hardly had MacArthur been placed in the "doghouse" of political rebuke when Secretary of the Navy Francis P. Matthews shocked the Administration once again during a speech delivered in Boston. "To have peace," he told his astonished audience, "we should be willing and declare our intention to pay any price, even the price of instituting a war to compel cooperation for peace." It was a clear advocation of "preventive war" and forced the President to rebuke Matthews, albeit without the press fanfare that had accompanied the MacArthur recriminations. At the time, 25 August, there was some speculation that even Secretary of Defense Louis A. Johnson was in the camp of the "preventive war" advocates.[7] There seemed to be a growing sentiment among some of the leaders of the nation for stronger measures against the Soviet Union. It must be clearly stated, however, in fairness to the many who shared only part of this idea in whatever degree, that not all of the people who favored a "get tough" policy would consent to going all

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[6] New York Times, 28 August 1950, p. 1.

[7] Ibid., 26 August 1950, p. 1.

out to engage in a "preventive war." In fact, less than a month after taking over the duties of Secretary of the Air Force in April 1950, Thomas K. Finletter spoke at the Air War College in an address Anderson must surely have heard. In it he stated without any equivocation that "preventive war" simply "is not a possible policy for the United States government to carry out at this time." Advocacy of such a policy, Finletter went on to say, "is simply taking the easiest way." It would appear that the American people were not "willing to face up to the tremendously difficult political and military things we have to do. I think that the American people want their military leaders and their political leaders to work themselves out of this mess in some way which is consistent with the spirit and the creed of the American people."[8] Mr. Finletter's predecessor, Stuart Symington, is reputed to have advocated from his position as head of the National Security Resources Board, that the time to act was then, when we had the military advantage we so highly valued. So the argument went, with advocates on both sides in very high places in government.[9]

At Maxwell, with the War College not in session and the next class temporarily suspended, Anderson accomplished some long over-

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[8] As quoted in Historical Study #139, p. 433; see also Thomas K. Finletter, Power and Policy (New York: Harcourt, Brace and World, 1954), pp. 13-14.

[9] John R. Maney, Colonel USAF, "The Support of Strategy," Air University Quarterly Review, VI, No. 3 (Fall 1953), p. 45.

due dental work which was painful and forced him to his quarters for some rest on the afternoon of 30 August 1950. There a local columnist, Allen Rankin, an acquaintance of the General, called to report that the next day's column by syndicated writer Drew Pearson was making some serious charges against him. He would like to come out to discuss the forthcoming column and get the General's reaction. Anderson was resting when Rankin called, but when Mrs. Anderson relayed the request, he agreed to see the columnist. Rankin had been working for the local Montgomery papers for some time, and earlier that year had published an article in which he favored striking Russia before they struck us. His concluding sentence at the time was "It's spring and nobody wants to fight, but if we must, let's get ready and hit the first atomic blow. More Americans will live longer that way."[10] Anderson had read this column at the time, for a copy appears in his files. Knowing Rankin's feelings, Anderson was more prone to grant an interview. In addition, of course, there was the curiosity about what Drew Pearson had to say. In very short order that curiosity was solved.

Rankin arrived at the Anderson's quarters on Maxwell and was shown up to the bedroom by Mrs. Anderson. There the General and his wife read Pearson's forthcoming column in which he stated that Anderson, as Commandant of the Air War College, had been "staging a series of lectures in which a preventive war is urged openly." Later in the

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[10] "Rankin File," Alabama Journal, 1 March 1950, p. 3.

column, Pearson returned to Anderson in stating that the General had openly indicated that he had favored immediate war with Russia in a speech before the Kiwanis Club of Montgomery, ". . . and there has been concrete evidence that the General follows a deliberate program at the Air War College aimed to indoctrinate students with the idea of an immediate attack."[11] There was no further mention of Anderson in the column which concerned itself chiefly with the Administration crackdown on MacArthur, Secretary Matthews, and others who were challenging or advocating a change in American foreign policy.

Rankin asked Anderson if he would give him any quotes in answer to Pearson that could be printed the next day along with the Pearson column. "Certainly not," the General answered Rankin, "it would do the Air Force no good and it would do me no good to get into open controversy with Drew Pearson." "Now you are a columnist; if you want my views, sit down, I will give you my views. Then you use them, but don't ever quote me."[12] Mrs. Anderson excused herself and for approximately three hours, the General almost lectured Rankin on his personal views about the dangerous Russian menace and the fact that the United States should carefully consider its policy concerning

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[11] "Washington Merry-Go-Round," Alabama Journal, 31 August 1950, p. 4a. Copies of all referenced clippings, as well as others from around the country which were sent to the Andersons are in file, "Clippings, Press Release Concerning 'Operation Rankin Doublecross'," Archives 168.7006-13. Hereafter cited as "Clippings."

[12] Interview, Mrs. Anderson, 3 August 1970.

the "no first strike" declarations. Rankin left the Anderson quarters presumably for a weekend on the Gulf where a bad storm was brewing. Instead he went to his office at the newspaper.

As might be expected the Anderson and Rankin versions of what happened next vary significantly. The latter stated later that he took copious notes during the bedroom discussion and that General Anderson should thereby have known that he, Rankin, was planning to quote him. A journalist's "bread and butter" is keeping faith with his sources and he surely would not have quoted Anderson without his permission. Anderson, when interviewed was equally persuasive, as already noted, and Mrs. Anderson recalls most vividly the conversation in the bedroom prior to the time she left the room. It becomes then a case of apparent misunderstanding and a final judgment must remain tentative. Whatever happened between the two men after Mrs. Anderson departed will never be conclusively known. As Anderson said when interviewed later, "Between Rankin and me, we know the truth of what happened."

As Rankin related later he carried his notes back to his office and showed them to his managing editor. The editor immediately recognized the news value and suggested Rankin write the story immediately for publication in the morning Montgomery Advertiser rather than a later editon. The editor, William J. Mahoney, took the unusual step of adding Rankin's byline and copyrighting the story thereby assuring full credit to the Advertiser. The story was released immediately.

Shortly after midnight the Associated Press called the Anderson quarters to verify the story. Mrs. Anderson took the call and, when she saw her husband sleeping soundly, refused to awaken him. She had barely hung up the telephone when another news agency called for the same purpose and once again she refused to awaken him.[13]

Headlined "U.S. Could Wipe Out Red A-Nests in Week, Gen. Anderson Asserts," the story appeared on the front page of the morning paper, with Rankin's byline. He quoted Anderson profusely throughout. Anderson had stated his speeches were not censored by President Truman or anyone else, and then he had added, "I think you'll find if you look over any speech I ever made that I've never advocated 'preventive war.' What does the term mean? I wonder if Drew Pearson can define what it means?" Anderson was further quoted by Rankin as saying that the term "preventive war" is an oversimplification. Anderson suggested that Secretary Matthews should have used a phrase such as "take necessary action." He admitted that at the Air War College, "sometimes we have to speak rather tersely. Now that our technology has produced the A-bomb, it is unrealistic to assume that it won't be used--and used first by someone--either by us or Russia. If we let the enemy choose this time and place of attack, then--our back is broken." Anderson

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[13] Ibid. Also, Peter B. Young, "End of a Phase: The Dismissal of General Anderson," (unpublished manuscript, Chapel Hill, 1959), pp. 12-13 and 16-17. The paper is based upon personal interviews with Anderson, Rankin, General Kenney and others. Hereafter cited as Young.

repeated to Rankin what he had said so many times to so many people before; that simply waiting to be hit first was not the American way--Americans believe in taking the initiative. He felt the nation was not sufficiently providing for its security and that in not doing so it was endangering the lives of the children who will become its future. To assume Russia would not use the atomic bomb as we sit by and watch them build it, is utterly foolish and military men with long years of experience ought to speak out to advise the State Department and the public about the situation. "I don't advocate preventive war, I advocate the shedding of illusions."

All that Rankin quoted Anderson as saying was quite in character for the General and was, in essence, what he probably said to him and had spoken before in other words at other times. Many times he had decried the fact to his audiences that having demobilized so rapidly after the war, the United States was unable to take advantage of the great war power that was hers at the conclusion of the fighting. Then was the time to tell the Russians to back down from grabbing Eastern Europe, and if they refused, force the issue, but instead we let them go. Now the power structure was different, Anderson felt, and the only thing the United States had in its favor was a rapidly dwindling atomic superiority. Things will get worse before they get better, Anderson seemed to be telling his audiences, and it was time things were checked. We are at war now (referring to Korea) even though it might

be called a "police action," and the cost in lives and dollars is just as great as any other war. It is silly then, Anderson argued, to talk of "preventive war" when the fighting has already begun. If you possess a gun, and you see another man going for a gun to kill you, you can warn him to stop, but if he does not and grabs for the pistol, then you are foolish to wait for him to fire the first shot. "Realism," Rankin quoted Anderson as sighing, "oh, for a little realism in America before it is too late!" Then came the statement that Rankin made into national headlines, "Give me the order to do it and I can break up Russia's five A-bomb nests in a week! And when I went up to Christ, I think I could explain to Him why I wanted to do it--now--before it is too late. I think I could explain to Him that I had saved civilization."[14]

The article was carried by all the wire services and reprinted in papers all over the nation on Friday, 1 September 1950. Anderson was shocked to see the trust he had implied in Rankin so flagrantly violated, but the damage was done. With his jaw still throbbing, he dressed and went to his office at the Air War College. There he prepared a statement for issue to the press. In it he covered the three areas that both Pearson and Rankin had touched upon. He stated unequivocably that he had been discussing various aspects of modern war--off the record! He stated that Rankin acted without his knowledge or consent in reporting the privileged conversation. Then he went on to

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[14] Alabama Journal, 1 September 1950, p. 1.

state his viewpoints on the three major areas touched upon in Rankin's column:

> On military and civilian responsibilities in foreign policy--
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> Such policy is the responsibility of the President and the State Department with the military advising as to military aspects of a particular action. Once that advice is given, Anderson insisted, the full responsibility for the decision and its consequences rests with the civilian leaders.
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> On the Air War College--
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> The Board of Visitors monitors the College each year: "Indoctrination" in the study of war has no place, nor does the Air War College have a "school solution." Teaching "preventive war" or any other preconceived course of action that was not national policy would violate educational integrity. Speakers are free to say what they will, with problem solutions being dynamic rather than established.
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> On "preventive war"--
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> Anderson insisted the term itself had never made sense to him. As he saw it the current world situation had to be resolved and if it took a war to do it, then it should be engaged in under conditions other than suicidal to the United States. To say that this implies "preventive war" Anderson stated is to be guilty of a gross oversimplification and reveal ignorance of the many complexities that make up the problem as it exists.[15]

The statement was released around nine o'clock. It received some press attention, but no detailed printing, the emphasis being on the earlier, more sensational statements. Shortly after completing the release, Anderson returned to his quarters to rest. Soon after ten

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[15] A copy of the prepared press release is in "Clippings." The one known printing of it is a brief digest in the Los Angeles Herald-Express, 2 September 1950. Why no other papers used Anderson's statement is a mystery.

o'clock that morning, General George C. Kenney, Air University Commander, arrived. He told Mrs. Anderson that she was to take all telephone calls, and answer the door, and that Anderson was "silenced" effective immediately. Further, General Kenney relieved Anderson of his post as Commandant of the Air War College effective as of that moment.

The timing of Anderson's remarks could not have been worse. Not that there was anything particularly new in what he had said, but the political climate, following so closely upon the rebukes of MacArthur and Secretary Matthews, made what might have passed for normal press reporting seem like a full-scale attack upon the Administration. The reaction was predictable. Exactly what message, if any, came from the White House is unknown; nor is there any solid evidence that the Secretaries of Defense and Air Force were involved in any manner except to be kept informed. However, Air Force Chief of Staff, General Hoyt S. Vandenberg, issued the order relieving Anderson after telephone conferences with General Kenney. While Kenney visited Anderson and informed him of his suspension, Vandenberg released a statement to the press in Washington, publically announcing the unusual action and explaining the position of the Air Force. The primary position of the new service, Vandenberg said, is the "prevention of war." He recalled for the press that in a speech in 1948 he had made this fact very clear, and that the desire to work for peace was strong then and remained

strong now. He concluded, "I am making this statement so that American citizens may know that the Air Force first, last and always, is primarily an instrument for peace."[16]

Judging from the clippings and letters in Anderson's file, the reaction all across the nation was considerable. Editorials appeared in leading magazines and William Randolph Hearst, Jr., in an editorial carried in many of his newspapers, spoke out against the "one official viewpoint" that American citizens were being forced to listen to through what he called censorship of "thought and expression."[17] In the Washington Star of Sunday, 3 September, a front page cartoon appeared depicting MacArthur and Secretary Matthews in an administration doghouse with Anderson descending by parachute to join them. The cartoon was entitled "Unification" and had Secretary Matthews remarking to MacArthur, "Look, Mac! Now we have air support!"[18] The St. Louis Post-Dispatch, the Chicago Daily News and the New York Times all carried editorials speaking against Anderson's so-called advocacy of "preventive war," with the latter admitting that the action taken by the Air Force in suspending the War College Commandant would be highly

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[16] Army-Navy-Air Force Journal, 9 September 1950, in file, "Clippings."

[17] Copies of the editorial from the Los Angeles Examiner, and the New York Journal American are in "Clippings." Additional expressions of the current feeling can be found in Time, LVI, No. 11 (11 September 1950), p. 22 and LVI, No. 12 (18 September 1950), p. 30.

[18] Washington D.C. Sunday Star, 3 September 1950, in "Clippings."

unpopular since many people agreed with the General.[19]

There was no doubt that Rankin regretted what Anderson called his "doublecross." Whether Rankin failed to understand the "off the record" nature of the conversation, simply chose to ignore it in the interest of a good story, or bowed to the demands for publication made by his editor will, as stated before, never be known. Anderson was understandably bitter about the incident for a long time. Rankin tried to apologize by printing in another column four days later the fact that he had not intended to be a cause of Anderson being suspended. He protested that he admired the General greatly and agreed with his views of a realistic approach to the Soviet threat. He admitted that Anderson had not advocated "preventive war" and that the General did not seek war of any kind. Merely the realistic approach to a nation that is getting ready to pull a gun on the United States and has openly declared their intention of using it. He praised Anderson for speaking out when the penalties were obvious, and that remark must have caused Anderson to explode even more than he had with Rankin's first article. It was a weak apology, if it could be considered that, and Rankin likened himself to an "unhappy Boswell who helps get his Johnson fired."[20]

At least a temporary answer to the public furor over "preventive war" as discussed in the newspapers came from the President

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[19] Editorials reprinted in the Montgomery Advertiser, 7 and 8 September 1950, in file, "Clippings."

[20] Alabama Journal, 5 September 1950, p. 1.

himself in a nationwide address on the evening of Anderson's suspension. Inserted into the text of an address on the Korean War was the statement: "We do not believe in aggressive or preventive war. Such war is the weapon of dictators, not of free democratic countries like the United States. We are arming only for defense against aggression."[21] The official policy had been declared in no uncertain terms and, while Anderson actually agreed in principle with what the President said, he was now pictured by the press as being in open opposition. Once before in his career he had been able to weather what had been interpreted to be opposition to then Chief of Staff Eisenhower. Now, against the Commander-in-Chief he knew he had no chance. Ordered to silence, he awaited his fate while remaining in and about his quarters at Maxwell.

The first thing he had to do was to cancel some twenty-five speeches for which he was already scheduled. Secondly, he had to straighten out his own affairs as best he could. His assignment at the Air War College ended, he hung almost in limbo waiting for some disposition of his case. On the first of October, he received a message from General N. F. Twining, the Vice Chief of Staff, requesting Anderson to come to Washington for a conference with General Vandenberg on 9 October. Anderson flew up and in the course of the meeting was informed that he could not retain his War College post even if (as he pleadingly offered to do) he gave up any speaking either in or out of the

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[21] New York Times, 2 September 1950, p. 1.

school. He agreed to take some other assignment if he would be allowed to speak occasionally, but this too was refused. Shortly after his return to Maxwell, General Twining called to offer him an assignment as Commander of Sheppard Air Force Base near Wichita Falls, Texas. At the time this assignment was considered the "Elba" of the Air Force. Anderson said he would take his action when such orders were received. When the orders arrived at Maxwell, Anderson applied for retirement effective 31 December 1950. Once the latter papers reached Washington, his Sheppard assignment was cancelled and Anderson waited out his last days in the Air Force at his quarters on Maxwell.[22] There were golf games, parties, and friendly visits, but all official functions were ended. Relationships with his superiors remained most cordial, with great respect on both sides.[23]

The third day of January 1951 was windy, cloudy and brisk at Maxwell. Most of the personnel of the units assigned were scheduled for the retirement parade on the aircraft parking apron of the base. The faculty of the Air War College was drawn up in a special formation beside the reviewing stand from which Anderson took his final salute. Thirty-three years of active duty with the air arm of the United States armed forces ended as the band marched off the apron playing "Auld

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[22] Interview, Mrs. Anderson, 3 August 1970.

[23] Nathan F. Twining, General, USAF(Ret.), Neither Liberty Nor Safety (New York: Holt, Rinehart and Co., 1966), pp. 18-22. General Twining praises Anderson as a "brilliant" officer and explains very well Anderson's position on "preventive war."

Lang Syne." It was not the way he had planned to leave, but the choice, at least so he felt, was not his. He could have stayed, accepted his "Elba" and a muzzling, and continued but this was not in his character. He had a message, a cause, to broadcast, and this seemed to be, at the time, the best way to do it. There was regret, of course, at the closing after so long of an active and illustrious career. There was a tear or two from his wife on the occasion, but with typical resolve they both turned away from the reviewing stand to take up a new life in Florida.[24] Speaking of the retirement parade some years later, General Kenney, who had stood on the reviewing stand with Anderson reminisced:

> I didn't say much to Andy that day on the flight line. The words had all been said. Sure I fought for him. I always take full responsibility for what goes on in my command, and I always back up my people. But I couldn't win a popularity contest in Washington any more than Andy could. My days were numbered too. I tried to keep some control over what Andy was doing, but you know Andy. Every time he spoke to one of those damn luncheon clubs I'd always ask to see his notes beforehand, and sometimes I'd say: "My God, Andy, you can't tell these people this!" And he'd always say: "Why can't I?" And this was usually a pretty good answer when you stop to think about it.[25]

What General Kenney overlooked in his remark is that, basically, no military man on active duty should speak in opposition to hi government's openly declared policy regardless of his personal feelings. What Anderson might have said in any of his Air War College lectures was

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[24] Interview, Mrs. Anderson, 3 August 1970.

[25] As quoted in Young, p. 20.

privileged and how Pearson got wind of it is unknown. But speaking under privilege is one thing, and talking to a newspaper reporter and to civic clubs is something else again. Presumably Anderson felt Rankin would keep what was said in the bedroom as privileged, using the material for a possible article but not directly quoting him. Yet Anderson had spoken in public on this general topic--the Russian menace and his answer to dealing with it--usually, it should be added, with enthusiastic audience reception. At the time of the Rankin interview he was aware of the MacArthur and Matthews incidents. Regardless of his innocent motive, he played with fire and, in this case, got burned. Protest that he did not mean "preventive war" as he would, once his quotes appeared in the press his superiors had no choice but to take the suspension action.

No man of Anderson's obvious mental ability should expect to lead his listener or reader down the path of reason as he did so often and then, with the same logic, presume upon his audience, purely for semantics, to believe that he was not advocating preventive war. It does not seem intellectually honest to lead a person's thinking to one conclusion, and Anderson usually dismissed or destroyed all argument that could lead to any but one conclusion, and then drop him, asking him to assume that he was not advocating an action for which the term "preventive war" was at that time being widely used. As nearly as can be determined from his writings, Anderson is correct in saying that he never

used the term. Yet the advocacy of a "slap" to a sovereign nation leads one to a "preventive attack" conclusion, especially in 1950, and to fail to state so fully is being intellectually dishonest. At best he was being less than candid with those who heard him and wanted to believe in him because of his vast experience.

Anderson was correct in saying that no war is a "preventive" war as he quite often did afterward in his own defense. There is a fine line between "preventive war"--a strike without provocation of attack based upon what one nation thinks another nation will do, and the "pre-emptive strike" which is action taken when intelligence sources relay word that an attack is imminent by minutes or a few hours. Even here the only difference is the degree of intelligence and the time frame involved. Yet Anderson, despite his brilliance in logical thinking, had developed a fixation on preventive war, and while semantically it might not have been so, he did seem to all extent and purposes to advocate the concept. Despite his obvious sincerity it was a position antithetical to all that the United States stands for, morally indefensible and not in keeping with his usual high calibre thought. Every man is entitled to a lapse now and then--this one was a most costly one in terms of his Air Force career.

Anderson just missed being a really broad-gauged individual and possibly a truly great thinker and strategist. He lacked, it seems, a full appreciation of the fundamentals of American democracy--those

concepts upon which our country's early leaders built this nation. Anderson failed to see that in advocating the "slap" or as it was popularly called then, "preventive war," he would destroy the very things in American life which he was sworn to defend. He became so enmeshed in realpolitik that he chose to consider very little, or even as a sign of weakness, the moral issues involved in his advocacy. In pursuing his cause, and in the complete belief that he was benefiting the nation he loved, he was helping to deteriorate the image of the Air Force in the eyes of most of the public at large.

While he was supported by many to whom he spoke, to others he became the embodiment of an Air Force that was "bomb happy," thinking only of militaristic solutions and of the aerial bombing of innocent people. His thinking did not quite go deep enough to allow him full understanding of the kind of problems his advocacy was causing in Washington, the rest of the nation and the world. His fixation simply became so great he could not see beyond it, and it ultimately caught up with him.

Anderson still had much to give the Air Force. He could have accepted his rebuke gracefully, taken the command of Sheppard Air Force Base that was offered him, bided his time and in due course probably have been allowed to resume his speaking. Several of his close friends and family hoped he would do just that, but it was quite in character for him to make the decision himself, which he presumably did since no evidence would indicate otherwise. How much his wounded pride and his devotion

to his cause entered into it will never be known. Some would consider retirement in this case the less manly way to solve the problem. Yet it was not in Anderson's make up to run from a fight he felt he had a chance to win or, for that matter, even from some of those he knew he could not win. Whatever the basis for his final decision, the Andersons left the Air Force for a try at cattle ranching in Florida.

For some time Anderson had been acquainted with several business men in Cleveland, Ohio, four of whom had approached him about managing a mutual investment in a cattle ranch in Florida when he retired. When the news of Anderson's suspension reached them, the four contacted the General and together they purchased 7200 acres in an area seventeen miles north of New Smyrna Beach, Florida. Anderson's enlisted driver retired from the service at the same time the General did and moved into the small house on the property to act as resident caretaker. The Anderson family lived, for about two months, in Titusville, Florida until they found a house in New Smyrna. Not without ranching experience in his early life, Anderson pitched in to do some of the work on the property, clearing trees, planting grass and silage crops, and in general preparing the land to raise cattle. It was hard physical work, and a type of life to which neither the General nor his family were accustomed, yet they all made the best of the situation. Susan learned to ride while on the ranch and continued to enjoy the sport for many years thereafter. Mrs. Anderson, while not attracted to

ranching, was active in garden clubs, church work and other civic affairs as time allowed. When it became obvious that the sandy soil could not grow enough grass to support sufficient head of cattle to make the venture profitable, the businessmen in Cleveland decided to sell out. The cattle were disposed of and the land was sold except for a few acres which the Anderson's shrewdly kept as an investment.[26]

The sale of the ranch necessitated a move and the General decided to sell life insurance, an occupation that would allow the family to return to Montgomery. With most of the details of the sale concluded, the Andersons left for Alabama in August of 1954. The insurance agency prospered and the active social life so typical of a military community resumed. Anderson was still in demand as a speaker, a situation he enjoyed very much, and he continued to accept invitations, as he had even while on the ranch, to speak to civic clubs and on a few occasions, at the Air War College and Air Command and Staff College. His interest in the Air Force never waned in the slightest and his devotion to its success remained adamantly strong. Nor did his cause of hitting the USSR before that nation hit us diminish any. The difference was that now he could be more open about his advocacy.

He was a logical choice to take over the duties as Executive Director of the newly-formed Air Force Historical Foundation. The Foundation had been organized in Washington, D. C. in February 1953,

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[26] Interview, Mrs. Anderson, 3 August 1970.

as an independent, nonprofit institution by a group of active and retired Air Force personnel and interested civilians. Brigadier General Hume Peabody was the first Director and, in an effort to put the Foundation closer to the Air Force Archives and to conserve funds, moved the Foundation offices to Maxwell Air Force Base a year later. Peabody and the Commander of the Air University at the time, Lieutenant General Laurence S. Kuter, were long-time friends of Andersons. When it became necessary for Peabody to give up his post as Director, Kuter, as one of the Foundation's directors, called upon the former Air War College Commandant to take the post. The Foundation was in financial difficulty because of too few subscriptions and, Kuter pleaded with Anderson, someone of the General's ability was needed to save it.[27] The chance to perpetuate historically the Air Force he loved so passionately was too much for him to turn down and he accepted the post. The pay was small, so was the staff, but Anderson was determined to make the Foundation go and to see that the Air Power Historian (later the Aerospace Historian) succeeded in its purpose of recording for posterity the history of airpower during its rapid growth.

Phasing out his insurance business as soon as he could, Anderson took over as Executive Director of the Foundation on 15 December 1954. Back issues of the Air Power Historian reflect the slimness of the budget available to produce them. Published first on a quarterly

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[27] Letter, General Kuter to author, 6 October 1969.

basis, it gradually grew from a slim, no-cover pamphlet-size publication to a full-fledged magazine printed in several colors and with many pictures. This was a direct reflection of the growing stability of the Foundation, which, in turn, was a similar reflection of the devotion, interest and time expended by Anderson.

Nor did he limit himself to obtaining Foundation memberships and advertising. He wrote his first article for the Historian in April 1956 on "How Air Power Grew."[28] From there on Anderson contributed editorials, comments, and articles to the magazine and was not above correcting an author whom he felt might not have all the facts, not by tampering with the author's article, which he would dutifully print, but by adding his own small article of "correction" at the end. The Historian was, in short, Anderson's magazine, and when the use of an editorial board became too cumbersome and time-consuming he, and his faithful secretary, Mrs. Janet R. Thompson, became their own editors. Under the General's guidance the Foundation "got well" and with the support of Air Force personnel, both active and retired, as well as many civilians in the aviation community, it assumed a position of some stature in the late 1950s. It was never well financially for long, however, and when, in 1960, monetary hard times arrived again, Anderson voluntarily gave up his entire salary as Executive Director so that the office staff could be paid and necessary supplies and machines purchased. From that

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[28] Air Power Historian, III, No. 2 (April 1956), pp. 134-37.

time on, until his death, the many hours the General put into the Historian and the Foundation were simply a labor of love. Once again the General had a cause, this time the history of airpower and his magazine. He believed just as strongly in it as he did the menace of Russia, the idea that man could only comprehend to the limit of his knowledge, and the concept that technology had pushed war into a new age.

His schedule of speeches remained heavy, but there was time for golf and for horseback riding with Susan. "She rides and I curry-comb," he would often say with a broad grin.[29] Life was pleasant, easy and intellectually stimulating with goals aplenty to satisfy his crusading spirit. The only thing missing was his beloved Air War College. In the spring of 1965 he caught a cold that he could not seem to throw off. He entered the Maxwell hospital for an examination in March and remained most of the month for tests. On one occasion he returned to the Foundation offices shortly after he had entered the hospital, reporting to the staff that he had been told he had "walking-around pneumonia" and he could see no sense in staying in the hospital with just that.[30] Due for more tests, Anderson reentered the hospital in early May. It was then that positive diagnosis was made of lung cancer, incurable and inoperable. From his bed, as his condition worsened, Anderson attempted to keep up with the work of the Foundation. He would dictate letters

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[29] Tom Sellers, "City Limits," Montgomery Advertiser, 14 April 1957, p. 8a.

[30] Interview, Mrs. Janet R. Thompson, 30 July 1970.

and reports to Mrs. Thompson until he tired, and then begin again the next day. When it became obvious that his strength was too far gone to continue the work, the General dictated his letter of resignation to the Board of Trustees on 1 July 1965. It was accepted with deep regret at a special meeting on 13 July 1965 at which time a new Executive Director was appointed and the offices of the Historian moved to Washington, D.C.

Throughout the remainder of the summer, Anderson's physical condition became steadily worse. By late July he was allowed only his wife and daughter as visitors. At almost noon, on 23 August 1965, one of the nation's true air pioneers breathed his last. There was a memorial service for his many friends at the Maxwell Base Chapel the following afternoon after which his body was flown to Washington where it was buried in Arlington National Cemetery on Friday morning, 27 August, with full military honors. The impatient warrior had fought his last fight.

It is given to few men to embrace in one lifetime the development and exploitation of a weapon of war. Technology in the twentieth century has made this possible more often than in any other period of recorded history. Orvil Anderson's military career parallels the development of airpower into a potent third dimensional weapon of war. In 1917 he saw the airplane as an exciting machine with the possibilities of high adventure and during the rest of his life he never lost that love of flying. For a "rated," or flying general officer, Anderson's career was

unusual in the fact that he never had an operational command. Even after he was catapulted to fame following his balloon ascension, his duties were of the staff variety rather than the command of a combat organization--the usual route to star rank. The closest he came to the latter was his job with Eighth Air Force in World War II. If this situation bothered him he said very little about it, instead making the best of the varied school and staff positions he held.

By virtue of these positions he gained a rich insight into the possibilities and application of airpower tactically, strategically and as a concept upon which the nation's foreign policy of deterrence would come to be based. He recognized very early the tremendous potential of the airplane and became an outspoken advocate for airpower and its recognition over old-fashioned, traditional concepts. He made many friends in this cause, and, as might be expected, a few enemies as well. On at least one occasion he likened himself to the outspoken General Billy Mitchell, acknowledging that Mitchell was "a little tactless as a man, probably even more so than am I."[31] Had his career reached its zenith at an earlier time, perhaps more contemporary with Mitchell, he could well have been a prophet without honor as was Mitchell. For Anderson, however, the cause was not primarily that of selling airpower, as was Mitchell's in the late 1920s, but rather its proper and unbiased

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[31] Air War College lecture, "Development of U.S. Strategic Air Doctrine," 20 September 1951, Archives K239.7162-6.

development and exploitation.

He applauded technology, even set world records with it, and then pleaded endlessly with his contemporaries to "comprehend" its vastness and potential influence. "Such," he advocated with seemingly boundless determination and energy, "is the key to sound solution. Experience can only serve as a check on the validity of solutions previously reached. But experience, if it be not slanted in its lesson values, can expand man's comprehension--and it is in this that experience gives its profit."[32]

Above all else, Orvil Anderson was a realist. His logical reasoning, which he so often urged upon his listeners, was based upon what he called the pragmatic facts of technology, the potential of airpower, and the rational, unsentimental viewpoint he held that Russia's Premier, Joseph Stalin, meant just what he said regarding communism's desire to conquer the west and especially the United States. He had no patience with the dreamers who felt the Russian "leopard" would somehow change its spots. The western powers' concessions at Yalta and Potsdam were criminal, Anderson believed, and created more problems than they solved. Immediately afterward, American forces demobilized to impotency while the Russian military remained strong. To Anderson, American possession of the atomic bomb and the capability to deliver it

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[32] As quoted by Robert F. Futrell and Lieutenant Colonel Eldon W. Downs, "In Appreciation: Major General Orvil Anderson," Aerospace Historian, XII, No. 4 (October 1965), p. 105.

by air was the one cold, hard fact that kept Stalin in place instead of enveloping all of Western Europe. He had a keen appreciation of the role of strategic air striking power in international relationships and of its value in off-setting Russia's military manpower advantage. As Russia came closer to achieving the status of an atomic power, the span of American supremacy became less and less. The outbreak of the Korean conflict in June of 1950 simply confirmed for Anderson what he already believed; that Soviet power would test the United States whenever and wherever it could, and as atomic parity approached he reasoned that but one realistic alternative remained open to his nation--to forsake the policy of never striking the first blow and prepare ourselves to hit Russia before we ourselves were hit. His exposition of this cause, in somewhat the fashion of the earlier-day Mitchell, caused his downfall. Whether events will ultimately do for Anderson what they did for Mitchell remains to be seen.

Anderson's concerns while in the service he took with him to his farm in Florida and as Executive Director of the Air Force Historical Foundation. To an Air War College class in 1952 he depicted the war in Korea as merely a part of something bigger, or as he put it, "the MIGs used in Korea were not made there." It was, he said, "ridiculous, idiotic and absurd" to expect to solve the problem on the 38th parallel instead of in Washington and Moscow.[33] His thinking on the Vietnamese

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[33] Air War College lecture, "Air Force Concept of Air Power," 16 October 1952, Archives K239.7162-6.

conflict, was equally strong. In an editorial in his Airpower Historian Anderson wrote:

> Today this nation is being subjected to a scourge of defeatist propagandists. It is being told that we cannot win the limited war in South Vietnam and should, therefore, get out quickly. This propagandistic palaver has the substance of unadulterated hogwash, and is totally wanting in factual support. With a very small segment of America's military forces, provided the proper forces are assigned to the task, that limited military conflict can and should be decisively ended with dispatch. But this victory will not restore peace in Southeast Asia. . . communism will continue in furthering their (sic) goals of global conquest. This is the dilemma the West will continue to face until a victor emerges from the global conflict.[34]

In his opinion on Vietnam, he looked at the logical realism of what he believed in and not its popularity. Anderson's tenacity of purpose was, in many respects, a most admirable trait in his character, but when it concerned an unpopular belief he could be accused of not knowing when to leave his belief as to what was true for good judgment. Nevertheless he clung to what he saw as the reality in the world around him. The fact that the American public knows so little about Anderson could be attributed to a variety of things--one of which is certainly that his ideas and opinions were not, at least in his lifetime, popular or accepted. A lack of acceptance did not hamper Anderson. It made him impatient with what he considered to be shallow thinking and all the more eager to convince his doubting contemporaries. He spoke endlessly and to any worthwhile audience in an effort to do so.

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[34] Editorial, "Air Operations in South Vietnam," Airpower Historian, XII, No. 2 (April 1965), p. 68.

Recognition has come to Anderson, and from the place he loved most in all his career, the Air War College. In January 1966, the senior school named its new building Anderson Hall, honoring its first Commandant with ceremonies during which Mrs. Anderson unveiled a bronze plaque imbedded in a stone shaft outside the building's main entrance. Just inside, in a prominent place on the wall of the lobby, hangs a large oil portrait of the General. Speaking at the ceremony of dedication, Anderson's long-time friend, Dr. Thomas W. McKnew, wondered aloud how history would treat "O.A." He answered his own question by predicting that it would be with "great kindness."[35] On this point, the final verdict is not yet in.

At least one vote has been seconded, however, and provides a fitting summation to Orvil Anderson's military life. One of his close associates throughout his lifetime, General Kepner, of Explorer I fame, calls Anderson "a real American, a dedicated patriot." He goes on to say:

> Once in a while there appears on the pages of history, a man with a unique ability to observe and analyze current situations as they affect man and his problems as he lives from day to day. If he can be prompted to study and apply history lessons,

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[35] Address by Dr. T. W. McKnew, Maxwell AFB, Alabama, 28 January 1966, The National Geographic Society donated, in Anderson's name, an award consisting of a life-time membership in the Society to the most outstanding student in the politico-military field at the Air War College. A suitably inscribed plaque bearing the winner's name hangs just inside the lecture auditorium.

> he becomes an instructor and a leader. If he can show younger citizens how to use the tools of education, or ideas, he should head an institution of learning. Such a man was Major General O. A. Anderson. The Air University should remember him well, as I am sure all his former associates and students will.[36]

The Air University, and the legion of students now Air Force leaders who knew Anderson and felt his personal persuasion, do remember him. In varying degrees, they have been influenced to reason the problems of today in a realistic and logical manner, as free as possible from the prejudice of the past and aware of the potential of the technological world in which we live. That he was able to be a lasting influence on the lives of these leaders, and thereby upon his beloved Air Force, would no doubt please Orvil Anderson very much. Many are the men in this world who would be happy to leave such a legacy.

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[36] Letter, General Kepner to author, 25 May 1970.

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